JOURNAL
OF THE
AMERICAN VETERINARY MEDICAL ASSOCIATION

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Volume CXVII SEPTEMBER 1950 Number 882

The Century's Second Ten Years

The Quashing of Private Veterinary Colleges

Of all steps taken for the advancement of veterinary medicine in the United States, the most effective was the resolution adopted by the AVMA at Kansas City in 1917, commanding, in effect, that:

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Our educational system, started in a small way in 1857, remained by and large a private enterprise until this far-reaching resolution was enforced, whereupon it became a public responsibility. Though prosperous in the material sense, wisely the proprietary colleges voluntarily vanished. Readjustment, hindered by the on-rush of motor vehicles, dropped student enrollment to the lowest level since the 1880's.

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$7.50 per annum Foreign $8.00; Canada $8.00 Single Copies 75 cts. prepaid in U. S.

Published monthly at 600 S. Michigan Ave., Chicago, Ill., by the American Veterinary Medical Association. Entered as second class matter August 10, 1932, at the Post Office at Chicago 5, Illinois, under the act of March 3, 1879. Additional entry at Mendota, Ill. Accepted for mailing at special rate of postage provided for in Section 538, act of February 28, 1925, authorized August 10, 1932. Reproduction of any part of this publication is prohibited, unless special permission is given. Permission will be given if the purpose seems justifiable and, in signed articles, if the rights or requests of author are not violated thereby. Reprints should be ordered in advance. Prices will be quoted after publication. Please send prompt notice of change of address, giving both old and new. Advise whether the change is temporary or permanent. Address all correspondence to American Veterinary Medical Association.

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AVMA ☆ Report

Veterinary Medical Activities

◆ The 87th Annual Meeting held at Miami Beach last month is now an event in history, but still so new that its eventual classification can not be determined. In many respects it was outstanding. In other respects we saw ways in which future meetings can be improved.

★ ★ ★

◆ The programs of the six sections were excellent. The Section on Small Animals drew an unusual amount of comment because of the demonstrations presented before and after the sessions, and because of the four panels of 6 speakers each — with each speaker held to five minutes.

★ ★ ★

◆ The Educational or Scientific Exhibits were more numerous and more colorful than usual. Placed in the foyer of the Auditorium, where every person entering and leaving the meetings passed them daily, they attracted wide attention.

★ ★ ★

◆ Dr. N. S. Mayo, Highland Park, Ill., won the coveted Twelfth International Veterinary Congress Prize for his service to the AVMA as secretary and chairman of the Committee on Education, and to the profession for his basic work on arsenical dips for tick control.

★ ★ ★

◆ Dr. L. A. Merillat, Chicago, Ill., received the AVMA Award: "In recognition of distinguished and meritorious service to the American Veterinary Medical Association as secretary, president, editor, and always-inspiring leader."

★ ★ ★

◆ Dr. J. Farquharson, Fort Collins, Colo., was awarded the Borden prize for 1950 on the basis of his work with the treatment of calf diphtheria, postparturient hemoglobinuria, and actinomycosis and actinobacillosis, in addition to a variety of surgical procedures widely used on dairy cattle.

★ ★ ★

◆ Miss Eleanor Mederak, Hamilton, Ont., was judged the winner in the humane act contest. Not for any single act of kindness but for her sincere desire to give helpless creatures a chance to live and her unselfish motives in befriending all types of animals was she given the award.

★ ★ ★

◆ The adjourned meeting at Havana, Cuba, was a thrilling climax to more than 200 persons who were privileged to make this trip and get better acquainted with our insular neighbors. Cuban veterinarians extended themselves to demonstrate their type of practice and the conditions under which they conduct it.

★ ★ ★

◆ Director of Professional Relations C. D. Van Houweling attended a meeting of the Council on Emergency Medical Service in Washington, D. C., on July 29 and 30. The Council is interested in using all types of professional personnel to the best possible advantage in an emergency.

★ ★ ★

◆ Dr. W. R. Krill, Columbus, Ohio, met in Washington, D. C. (July 31), with the Healing Arts Educational Advisory Committee of the Selective Service System, to which he was appointed by President Truman while serving as chairman of the AVMA Executive Board. His work is to assure equal consideration for veterinary medicine with other professions in setting student and manpower quotas.

★ ★ ★

◆ Executive Board elections resulted in victory for Dr. C. F. Schlotthauer, Rochester, Minn., in District V, and for Dr. E. E. Wegner, Pullman, Wash., in District VII. Dr. Schlotthauer replaces Dr. C. C. Franks, Des Moines, Iowa, while Dr. Wegner succeeds himself.

★ ★ ★

◆ Dr. C. D. Van Houweling, director of professional relations for the Association, spoke to the National Livestock Producers Association in Fort Worth, Texas, on July 21, 1950. Attending the meeting were the livestock buyers and salesmen representing the 40 agencies of that Association. The prevention of losses incident to the shipping of cattle and sheep from the ranges to the feed lots was thoroughly discussed.

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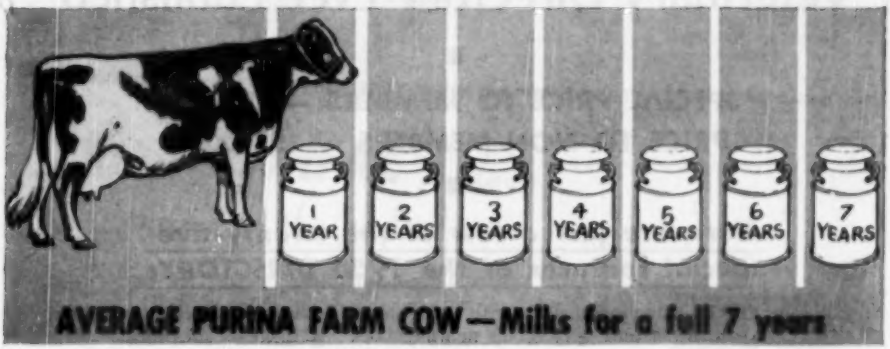

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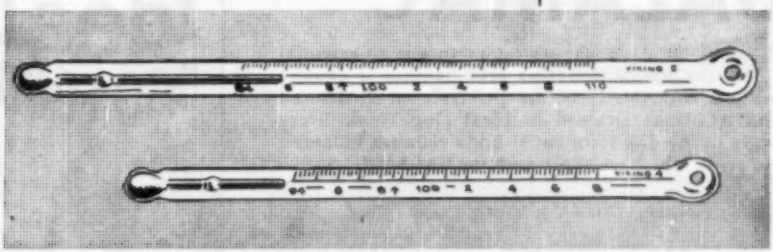

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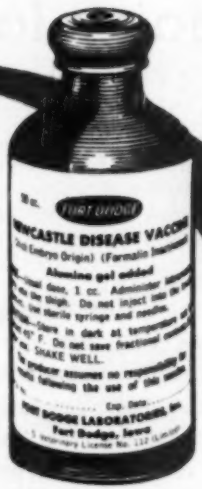

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Journal
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American Veterinary Medical Association

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VOL. CXVII SEPTEMBER, 1950 NO. 882

An Approach to the Mastitis Problem

(Continued from the August JOURNAL)

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Ithaca, New York

Results of 1947 Studies

It is hinted in our previous report[1] (Part B; pp. 106 and 116-119; tables XI, XXVIII, XXIX, and XXX) that good environment was important in reducing mastitis and infection. These tables were the result of the use of a carefully worded questionnaire filled out each time a herd was surveyed. The questionnaires were studied and a summary of them included 14 points on which a herd was rated as good or bad on management and environment. We rated 167 herds, including 4,861 cows, and it seems significant that the herds with bad management and environment showed more infection and mastitis 28 out of 33 possible times. It was also found that cows maintained where management practices and environment were good on all or nearly all points showed 74 to 82 per cent normal udders, 6 to 9 per cent abnormal secretions, and 13 to 31 per cent streptococcic infection. Those cows in the four groups where environmental conditions were bad, or nearly all of the conditions were bad, showed 57 to 70 per cent normal udders, 17 to 18 per cent abnormal secretions, and 40 to 46 per cent streptococcic infection. These data suggested that it was wise for an owner to provide ideal conditions of housing and milking for cows before spending huge sums on them for treatment. The most disappointing feature of those results was that only 707 cows (17% of the cows studied in detail) were handled approximately according to ideal methods. If a practice that was very bad existed, such as buying replacements at public sales, and other factors of management were good, the herd had to be classed as having bad bad management practices. Many herds were good on several points of environment and management but failed in some important detail. Chart 1 gives in outline form the management practices studied through use of the questionnaire and is an excellent guide to a practitioner who wants to detect what is wrong in the environment of herds where mastitis is a problem.

CHART 1—Basis for Rating Herds on Environment and Management Practices

Environment	
Stalls—Space	Definitely adequate (G)
Fig. 1 (inadequate).	Ordinary—neither adequate or inadequate (B)
Fig. 2-3-4 (adequate).	Definitely inadequate (B)
	Pen type stable (G)
Bedding	Adequate (G)
	Inadequate (B)
Feeding	Heavy (B)
	Good (G)
	Poor (B)
Quality of milking	
Fast milking	Yes (G)
	No (B)
Mechanical efficiency	Good (G)
(Vacuum & pulsations).*	Bad (B)
Teat inflations	Good (G)
(Cleanliness and repair)	Bad (B)
Fig. 5.	
Sanitation	
General sanitation	Good (G)
(Milking on floor,	Fair (B)
washing udders, etc.)	Poor (B)
Mud and water	
Barnyard or feedlot	Good (G)
Fig. 6 (bad).	Fair (B)
Figs. 7 & 8 (good).	Poor (B)
Pastures	Good (G)
	Fair (B)
	Poor (B)
	None (G)

G = good; B = bad.
*A vacuum gauge is highly essential in the study of the causes of mastitis.

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Presented before the Section on Surgery and Obstetrics, Eighty-Sixth Annual Meeting, American Veterinary Medical Association, Detroit, Mich., July 11-14, 1949.

DIAGNOSIS

Many owners and veterinarians feel that a culture or Hotis test is necessary to tell how much or what kind of mastitis a cow has. This is the reason laboratories are popular, but there will not be enough laboratories for a long time to culture all of the milk that owners will want examined, even in New York State. We have always maintained that a veterinarian who really wanted to carefully examine the herd at the farm, using palpation for fibrosis and other barn examinations, and who would act as an adviser to the dairyman on his stabling and milking practices, could control mastitis in the clinical sense. We were given the opportunity this spring by two progressive veterinarians, Dr. J. D. Sweet and his associates at Chateaugay, and Dr. F. W. Schutz at Brewster, to check on this belief.

Four herds were submitted by these men in which the owners, with the help of these practitioners, changed their herds from problem herds to ones reasonably free from the disease, by use of clinical methods alone. The results of our careful clinical and laboratory survey of these herds showed that all of them were in better shape than many of the herds where we had been able to do repeated laboratory work, but where the owner had not coöperated on management and the veterinarian had not been able to carry out a good treatment program. All of the four herds had some pathogens in the milk that had been missed by clinical examination alone. These veterinarians are convinced that the laboratory analysis is of value at this point in guiding them further in developing from these few herds, ideal herds free from mastitis and *Str. agalactiae* infection. I know that many other practitioners have used the same practical approach to the problem. Plastridge and Hale[8] have shown the desirability of going a step further and eliminating all *Str. agalactiae* from herds in Connecticut.

In our routine clinical work on this program (fig. 1), we place all of the cows in most herds in two groups, those clinically normal and those clinically abnormal. An occasional cow goes into a third group called "clinically advanced cases." The cows that are normal are called "class 2," those abnormal clinically are "class 3," and the few hopeless cases are "class 4." The infections are determined by bovine blood-agar plate cultures, some of the details of which are recorded here by Dr. J. M. Murphy. A more detailed description of our laboratory procedure is available upon request. Also, forms used for our clinical and laboratory records are standardized and available to those interested.

CULTURAL METHODS

In routine work, the streptococci are presumptively classed as *Str. agalactiae* or not *Str. agalactiae* according to the phenomenon discovered by Christie, Atkins, and Munch-Petersen (CAMP)[9]. The CAMP phenomenon depends on a previously unknown ability of Lancefield group B streptococci (to which group *Str. agalactiae* belongs) to hemolyze bovine or ovine erythrocytes after these erythrocytes have been acted upon by staphylococcic *beta* hemotoxin (which ordinarily does not destroy the integrity of the erythrocyte in 24 hours at 37 C.).

TABLE I—Environmental Ratings

G-A =	Good	Herd	Management	–	Adequate	Vet.	Service
G-I =	"	"	"	–	Inadequate	"	"
B-A =	Bad	Herd	Management	–	Adequate	Vet.	Service
B-I =	"	"	"	–	Inadequate	"	"

The name CAMP test is given to the simple testing method that was described later by Munch-Petersen, Christie, and Simmons.[10] This test is made on previously incubated (24 hours at 37 C.), uninoculated, blood-agar plates containing 5 per cent of bovine blood known to be of low staphylococcic antihemotoxin (*beta*) content. A 1-mm. loopful of a 24-hour broth culture of a *beta* toxin-producing Staphylococcus (maintained for this purpose) is streaked across the center of a blood-agar plate. One colony of an unidentified Streptococcus from an agar plate milk culture is then streaked perpendicularly, beginning as close to the Staphylococcus streak as is possible without touching, and extending outward on one side for about 1 in. In this way, at least 8 unidentified streptococci (4 on each side of the Staphylococcus) can be accommodated on one blood-agar plate. The plate is then incubated at 37 C. for eighteen hours, and the reaction is noted.

The Staphylococcus and the streptococci grow simultaneously, and, except where a group B Streptococcus grows within the *beta* hemolytic zone of the Staphylococcus, the various forms of hemolysis are the same as those seen ordinarily. Where a group B Streptococcus and the *beta* hemolysis of the Staphylococcus occur together, however, there is an area of clear hemolysis larger than is ever produced by such streptococci on plain blood agar. The size of this zone of reaction hemolysis varies, but since the Streptococcus also grows outside the Staphylococcus zone, a

distinction can be made between the natural streptococcic hemolysis and the reaction hemolysis. When a reaction does not occur, the natural streptococcic hemolysis is the same both inside and outside the hemolytic zone of the Staphylococcus.

By this method, and using ovine blood, all of 200 strains belonging to group B produced this reaction,[2] whereas none of 395 strains not of group B produced it. Under routine New York conditions, using bovine blood, we have found that approximately 99 per cent of group B streptococci are positive and approximately 94 per cent of those not of group B are negative. Thus, by considering both positive and negative reactions, we consider that the CAMP test has an accuracy of approximately 98 per cent.

TABLE 2—Mastitis Control Progress

Good - Abnormal secretions	- 10% or less (cows)
Quarters S. agalactiae	- 0-5%
Poor - Abnormal secretions	- 11-20%
Quarters S. agalactiae	- over 5%
No Progress	
Abnormal secretions	- more than 20%
Quarters S. agalactiae	- over 5%

RECENT ESTIMATE OF PROGRESS IN MASTITIS CONTROL

The supervising veterinarian and the six field veterinarians were asked, on June 1, 1949, to estimate, according to their best judgment, the results of mastitis control in 412 herds where more than one complete survey had been made, either by the field veterinarians (official survey) or by cooperating veterinarians (unofficial survey), since the program started. Herds were classed as having made good, poor, or no progress, and these terms as well as the environmental ratings are defined in tables 1 and 2.

The total environment was considered under the headings mentioned previously,[1] and adequate or inadequate use of veterinary service was added as an important part of the environment of cows from a mastitis-control standpoint. These terms, adequate veterinary service, and inadequate, could form the subject of an entire paper. In general, adequate service meant that the farmer consulted a competent veterinarian, that the veterinarian did an average, or better than average, job of treating the mastitis in the herd and in advising the dairyman regarding things that must be done to prevent mastitis. If the farmer failed to use a practitioner frequently and repeatedly, or if the veterinarian was consulted but did a careless job of treating or supervising the treatment, the veterinary service was termed inadequate. We were unable to state that each veterinarian used separate sterile needles for each cow treated, or that ample all-glass or other suitable boiled or chemically sterilized syringes were used in conducting the detailed treatment under this program. In many instances, the quality of this treatment improved.

Infection, Str. Agalactiae Only.—A few facts appear from the mass of general, and admittedly not strictly accurate, information provided by these tables. It must be stated that many of these herds at the time of the last survey had 6 to 15 per cent infection with *Str. agalactiae* and that this, undoubtedly, made them fail by a narrow margin to qualify for classification as good progress herds when, actually, the owner and everyone concerned felt that excellent progress had been made. In addition, at the termination of the studies there were 25 herds, 6 per cent of the 412 studied (table 7), that showed no *Str. agalactiae* and no abnormal secretion that would cause an owner to discard the milk. A few herds reached periods when there were no pathogens in quarter samples of milk from any cow in the herd. Such herds often showed one or more quarters giving abnormal milk from unknown causes. In spite of these inaccuracies and details that fail to appear in tables 3 to 7, the data suggest a few trends.

TABLE 3

ENVIRONMENTAL GROUPS		No. Herds	Percent
G-A	Good Herd Management Adeq. Vet. Service	127	31
G-I	Good Herd Management Inadeq. Vet. Service	18	4
B-A	Bad Herd Management Adeq. Vet. Service	213	52
B-I	Bad Herd Management Inadeq. Vet. Service	54	13
	Total	412	--

One of the most important facts that this type of study revealed is that 35 per cent of our herds have what is classed as good environment, and a total of 83 per cent of the herd owners used adequate veterinary service (table 3). It is regret-

table that 65 per cent of the herds selected for our studies lacked something important in their management and environment so that they could be classed only as having bad management. Until this situation is corrected, we must learn to live with considerable mastitis. Trauma of various kinds leads the list of factors that operate against udder health, while unsanitary milking practices are too common. Perhaps the 17 per cent of herds described as receiving inadequate veterinary service is a rather inaccurate and low estimate if ideal methods of treatment and frequency of treatment were considered. This particular phase of the problem is where our profession can improve the service in mastitis control by good salesmanship

TABLE 4

ENVIRONMENTAL GROUP	No. Herds	S. AGALACTIAE Quarters Infected: First Survey None No.	First Survey None %	Last Survey None No.	Last Survey None %	Last Survey 5% or Less No.	Last Survey 5% or Less %
G-A	127	15	12	41	32	74	58
G-I	18	1	6	6	33	7	39
B-A	213	15	7	43	19	100	47
B-I	54	3	6	7	13	17	31
Total	412	34	--	95	--	198	--
Av.	--	--	8	--	22	--	47

and by learning the best techniques of prevention and treatment.

Table 4 is self-explanatory and indicates that the G-A group showed good progress in 71 per cent of the herds, while the B-A group showed good progress in but 44 per cent. Those herds with B-I (bad environment and inadequate veterinary service) showed good progress in but 19 per cent of the herds compared with 71 per cent in the ideal group and 49 per cent for the average under all conditions. There was, in spite of all management and adequacy or inadequacy of veterinary service, good progress in nearly half of the herds—49 per cent; poor progress in 39 per cent, and no progress in 12 per cent. It is not to be inferred that all of these failures to make ideal progress are related to poor environment and inadequate treatment. There are, undoubtedly, many other known and unknown causes that operated in the herds with poor or no progress. Research, now in progress, may throw light on some of these unknown causes.

Table 5 shows the number of herds that had no infection with *Str. agalactiae* on the first and last surveys, and how many had very little *Str. agalactiae* infection (5% or less) on the last survey. An attempt is made to show the possible relationship of these findings to the four environmental groups (G-A, G-I, B-A, and B-I). The results are not outstandingly favorable, but 32 per cent of the herds had none of this particular chronic mastitis infection at the end of the surveys in the G-A (ideal) group, whereas but 13 per cent were free in the B-I (bad) group. There was nearly double the percentage (58%) of herds with 5 per cent or less infection on the last survey in the

TABLE 5

ENVIRONMENTAL GROUP	No. Herds	PROGRESS IN MASTITIS CONTROL: Good %	Poor %	No %
G-A	127	71	24	5
G-I	18	39	50	11
B-A	213	44	42	14
B-I	54	19	57	24
Total Av.	412	-- 49	-- 39	-- 12

ideal group, as compared with 31 per cent in the group where environment was bad and veterinary service inadequate. It is encouraging that 47 per cent of the herds had 5 per cent or less *Str. agalactiae* infection in spite of bad environment at the end of the surveys when veterinary service was listed as adequate. Table 5 indicates a significant sign of progress in these herds when the summary is studied. It shows that 34 (8%) of the herds had no *Str. agalactiae* on the initial survey, while 95 herds (22%) were in the clean group on the last survey. There were 198 herds, or an additional 47 per cent of the group studied, that were reduced to 5 per cent or less *Str. agalactiae* infection. This made a total of 69 per cent of the herds that became free or nearly free of *Str. agalactiae*.

Of the 34 herds free initially, 23 were free at the end and 10 were carrying 5 per cent or less. One herd, free at the start, carried more than 5 per cent *Str. agalactiae* quarters at the end. It is important to point out that our records show that many of these herds free of the most common causative agent of chronic mastitis, *Str. agalactiae*, remained fairly free from clinical mastitis and produced very well. A few were distinct problem herds with hemolytic staphylococcic infection and sore teats, from various injuries and infections acting as possible causes of the trouble. A few cows in most herds appear to be mastitis-susceptible individuals and secretions from the udders yield various organisms including non-*agalactiae* streptococci. Much more research is needed to determine why these cows are susceptible and to determine the true causes of mastitis in these problem herds.

ABNORMAL SECRETION

A discussion of progress in our attempt to control the incidence of abnormal secretions in these 412 herds raises the question of what an abnormal secretion really is. We used the term for all quarters showing *definite* changes on the strip cup (a black bakelite one); obvious clots, flakes, pus, and watery milk (fig. 6); and a strong (green or dark green) reaction on tube bromthymol blue tests. Secretions from dry, drying off, and fresh cows were rated as well as possible without the use of the bromthymol blue test. Some of these changes are physiologic, transient, and inconsequential, while real abnormal secretions in the usual clinical sense suggest that the cow must be treated or at least her milk is unsalable. It is agreed by our clinical staff that our rating of abnormal secretions is a critical and severe one, and this is essential if early and effective treatment is to follow an accurate diagnosis. No doubt, several very high producing cows are listed as having abnormal secretions, and yet their usefulness was not greatly reduced as long as they were treated (infused) carefully and repeatedly.

TABLE 6

ENVIRONMENTAL GROUP	No. Herds	ABNORMAL SECRETIONS Percent Cows Per Herd: First Survey Per cent	Last Survey Per cent
G-A	127	12	7
G-I	18	12	7
B-A	213	15	10
B-I	54	18	14
Total	412	Av. 14	Av. 10

An attempt was made in table 6 to correlate the four factors regarding environment and use of the veterinarian with cows (not quarters) giving abnormal secretions. The two groups of herds with good environment had an average of 12 per cent of the cows showing abnormal secretions on the first survey and an average of 7 per cent on the last survey. The herds with bad environment but with adequate veterinary service dropped from 15 per cent of the cows with abnormal secretion on the first survey to 10 per cent on the last survey. In contrast, those that were kept under bad environment and where inadequate veterinary service was used, showed 18 per cent of the cows with abnormal secretion on the start and they still had twice as high a percentage (14%) at the last survey as the two groups with good environment had on their last surveys.

It may be rather significant that 145 herds with good environment (G-A, G-I) studied in table 6 showed an initial infection of 12 per cent, and changed to 7 per cent at the termination of our observations, while 267 herds with bad environment (B-A, B-I) showed initially 16.5 per cent abnormal secretion, and were only reducible to 12 per cent by our method of approach to date. They may improve with further treatment and/or improved environment.

The group with adequate veterinary service (G-A, B-A) included 340 herds with an average abnormal secretion rate of 13.5 per cent, and this was reducible to 8.5 per cent. The small group of 72 herds that had inadequate veterinary service (G-I, B-I) started with an average of 15 per cent abnormal secretions and the average was reduced to 10.5 per cent. It would appear, therefore, that ideal environment and adequate veterinary service are essential, but that good environment was fully as important as adequate veterinary service in the development of successful mastitis-control herds.

Fig. 6—Many good strip cups* are available. Pooled milk from first one and then another quarter on the black composition background of this one shows slightest abnormalities, and being in a pail it avoids spilling milk on the floor.

*Sold by M. F. Whitmore, D.V.M., Addison, N. Y., who was assisted by Dr. S. D. Johnson in perfecting it.

Table 7 shows that 84 herds (20%) of the 412 that received two or more complete surveys revealed no abnormal secretions in any quarter at the time of last survey. No herd was free of abnormal secretions on the initial survey. The incidence of *Str. agalactiae* infection in these 84 herds is interesting. There were 25 herds, 6 per cent of the 412 herds studied, showing none of

TABLE 7—Streptococcus agalactiae Infection in 84 Herds Showing no Abnormal Secretions on Last Survey in 412 Herds Examined Two or More Times

QUARTERS INFECTED	NUMBER HERDS	PER CENT
NONE	25	6.0
5% OR LESS	46	11.2
OVER 5%	13	2.8
TOTAL	84	20.0

that infection; 46 herds (11.1%) with 5 per cent or less; and 13 (2.8%) with more than 5 per cent infection, each of which herds did not have a single quarter giving any abnormal secretions on the last examination. Putting it another way, 71 (84.5%) of the 84 herds giving no abnormal secretions were essentially free from *Str. agalactiae* infection, while 15.5 per cent had over 5 per cent *Str. agalactiae* infection. Absence of pus and watery milk and absence of chronic streptococcic mastitis infection occurred together.

VOLUME OF WORK

More than 1,000 herd owners received complete herd surveys from the initiation of the program, April 1, 1946, to June 30, 1949. This required 2,249 complete herd surveys and 70,988 cow examinations. Approximately 25,000 cows were maintained in these herds. In addition, 2,278 incomplete herd surveys (checking of a few special cases or treated quarters) and 11,159 cow examinations were made in more than 1,000 additional herds. The number of cows present on first complete surveys of herds in the calendar year 1947, was 9,210 compared with 17,009 in 1948. Much larger numbers of cattle were under the control program in 1949.

More than 300 county, state, and practicing veterinarians in New York, and a few in Pennsylvania and Vermont have coöperated with the program. Most of these veterinarians and their clients are positive that the program has made great progress in the control of mastitis.

(*To be continued*)

Sales of Veterinary Medicines Aided by Fourteen Companies

American Druggist (April, 1950) advises pharmacy owners that the following companies will supply them with promotional material to stimulate sales of veterinary medical products and so-called animal health goods:

American Scientific Laboratories, Madison, Wis.
Bickmore, Old Town, Maine
William Cooper & Nephews, Chicago, Ill.
Cutter Laboratories, Berkeley, Calif.
Globe Laboratories, Fort Worth, Texas
Dr. Hess & Clark, Ashland, Ohio
J. Hilgers, Binghamton, N. Y.
Lederle Laboratories Division, American Cyanamid Co., New York, N. Y.
Geo. H. Lee, Omaha, Neb.
H. W. Naylor, Morris, N. Y.
Pay-U Laboratories, Quincy, Ill.
Polk Miller Products, Richmond, Va.
Dr. Salsbury's Laboratories, Charles City, Iowa
Vineland Poultry Laboratories, Vineland, N. J.

Although the list does not include all companies lending vigorous aid to drugstore sales of veterinary medicines, the *American Druggist* points out that "no manufacturer is omitted who sent us the information before going to press." Among the promotional materials offered by the companies named are newspaper mats, folders and booklets, counter displays, complete window displays, and store pennants.

Human nature is so imbued with the idea of the medicine man and his incantations that it sometimes appears everybody is looking for the miracle drug. Actually, a large number of people are engaged in the drug and therapeutic trade. Research laboratories have discovered and perfected more than 5,000 sulfonamide drugs but, of these, only a few are economically useful. There also are antibiotic agents by the thousands, many of which serve a special purpose, but few of them cover a wide range.—*Austin Smith, M.D., Illinois.*

Tibial Fracture in an Aged Stallion

RICHARD L. RUDY, D.V.M., M.S., and VERNON L. THARP, D.V.M.
Columbus, Ohio

FRACTURES in aged horses are occasionally presented for treatment. Many such animals have been destroyed when diagnosed because of the difficulty in keeping them comfortable for six to eight weeks or longer, and at the same time maintaining

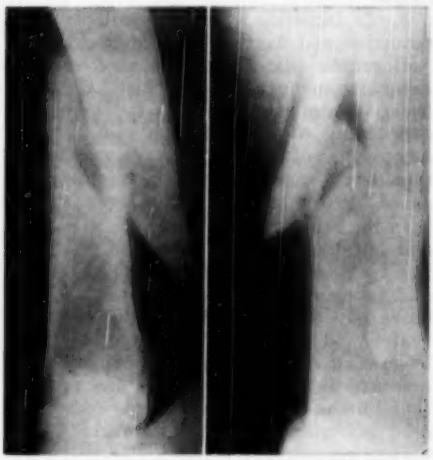

Fig. 1—Radiographs (left, lateral view; right, anterior posterior view) of comminuted tibial fracture taken five weeks after reduction.

reduction and immobilization of the fracture. This is a report of a satisfactory recovery following reduction and fixation of a fracture under field conditions.

In January, 1949, we attended an Arabian stallion, Raffles, with an acute injury to the right hind leg. The animal was a 23-year-old active stud and apparently in good physical condition. He had been confined to a box stall and small paddock, and his kicking the concrete wall of the stall was suspected as the cause of the injury. An examination was made five hours after the injury was discovered. The horse was standing on three legs in a temporary sling. There was crepitation, acute pain, and swelling approximately 6 in. above the right hock. By digital palpation, a simple, comminuted, oblique fracture of the distal third of the right tibia was diagnosed.

The animal was secured in the temporary support, and a commercial preparation of magnesium sulfate and chloral hydrate was given intravenously to complete light, surgical anesthesia. The animal was gently lowered to a bed of straw and the anesthetic was administered intermittently to maintain surgical anesthesia.

The procedure for reduction was as follows: Holes ⅛ in. in diameter were drilled in the right hind hoof, into which wires were inserted for traction. The leg

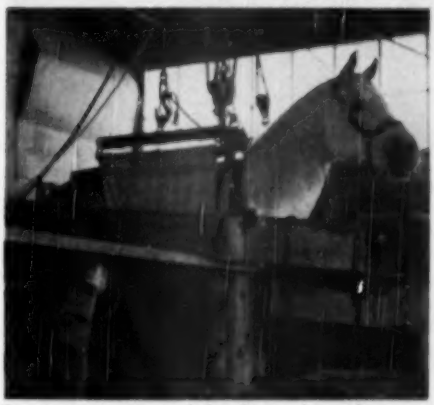

Fig. 2—Arrangement of the sling and cast for treatment of the tibial fracture.

was thoroughly brushed and four layers of 6-in. stockinette were applied from the hoof to the inguinal area. The stockinette layers were held as high as possible by placing 2-in. adhesive tape over the rump at each

Fig. 3—Raffles (top) following recovery from the fractured tibia; closeup (bottom) of lateral and posterior view of hock after cast was removed.

layer. If this precaution is not taken, the stockinette may slip distally because of the direction of the hair. Thin cotton pads were placed in depressions of the limb above the hock and at the distal end of the proximal fracture fragment. No other cotton pads were used. Extension and reduction were aided by means of a block and tackle fastened to the hoof wires, and a rigid cast was applied. "Air-cast" was used because of its strength and light weight. The cast was supported with loose straw, and slight tension with the block and tackle was maintained during drying. A cloth tent and heater fan were used to hasten drying.

A modified Thomas splint was fashioned from ½-in. aluminum alloy rod. The ring of the splint was made to fit the thigh snugly and padded with 1-in. sponge rubber. A covering of plastic was tied over the rubber to make a smooth nonabsorbent surface. The length of the splint was adjusted so that it extended only ½ in. beyond the hoof to avoid excessive pressure in the inguinal area. After the air-cast had become rigid, the Thomas splint was applied and secured by the wires in the hoof. Lateral supports of derby bandages were used to stabilize the cast and leg in the Thomas splint.

X-ray facilities were not available when reduction and fixation were complete. The radiographs (fig. 1) were taken five weeks following application of the cast. Calcification of the primary callus is visible and the over-riding of the fragments and faulty alignment noticed in the radiographs are considered satisfactory for fractures reduced by this method in the horse.

In the healing of any fracture, after-care and nursing are very important. A sling was fashioned by the farm manager, and he and members of his family stayed with the horse day and night during the period of healing. The horse was kept comfortable by raising and lowering the sling to relieve pressure on the inguinal area and rest the sound limbs (fig. 2). This twenty-four hour, daily attendance was a major factor in the horse's recovery.

The cast was removed twelve weeks after injury and the animal was kept high in the sling for three days. During the following ten days, fifteen to thirty minutes of exercise in the lowered sling was allowed daily and on the tenth day he was turned loose in the box stall. Several days later he was turned into the paddock and cantered back to the stall (fig. 3).

SUMMARY

A case of satisfactory treatment of a tibial fracture in an aged horse is reported. A technique of reduction and fixation of

a simple tibial fracture in the horse is discussed. Rigid cast and modified Thomas splint with sponge rubber and plastic padding are described.

We never reduce a perineal hernia unless we can castrate the dog. No castration—no operation.—*M. W. Allam, V.M.D., Pennsylvania.*

A light rubber band placed over the base of the ear of a pig makes a good tourniquet for enlarging the marginal vein so that it can be easily entered for intravenous injection.—*W. M. Coffee, D.V.M., Kentucky.*

The use of epidural anesthesia when "cleaning" beef cows prevents straining and also fecal contamination of the operator.—*F. H. Fox, D.V.M., New York.*

In handling fight wounds, it is better to dissect out the bruised, traumatized, and dirty tissue and to suture as a sterile wound, says Dr. R. E. Ruggles, Moline, Ill.

Inhalation anesthesia, first performed at the Massachusetts General Hospital in 1846, has been improved but not replaced by the modern parabronchial anesthetics.

Xylocaine.—The newest local anesthetic (*Brit. Dent. J.*, Dec. 17, 1949) is xylocaine which possesses the exacting properties of odontology in respect to prompt, safe, and durable action. Xylocaine (*zylo-*, wood; *-caine*, form of *-ine*, like) is said to have all of the specifications desired of a local anesthetic.

Milk Fever and Ketosis.—To help differentiate between ketosis and milk fever in regular practice, the pupillary reaction to light is important. There is a reflex reaction in ketosis, but this reflex is absent in milk fever. —*F. H. Fox, D.V.M., New York.*

Heat Lamps for Sows.—A Minnesota producer has found heat lamps as helpful as guard rails and corner brooders in keeping sows from crushing their pigs. *Hormel Farmer* (March, 1950) reports that sows move slower and are gentler and less irritable when heat lamps are provided for them as well as the pigs. The lamps are suspended so that a bump by the sow will not swing them far enough to break.

Restraint Through Anesthesia

Anesthesia is necessary to provide the degree of restraint which is needed for careful and correct surgery in animals. Chloroform may be used for general anesthesia in horses, care being taken to avoid burning of the nostrils.

In cattle, however, general anesthesia is used only in extreme cases. When so used, it should be administered in minimum amounts, and then the actual surgery should be done under local infiltration anesthesia.—*G. R. Fowler, D.V.M., Iowa.*

Accurate pregnancy diagnosis in dairy cattle depends upon the tactile sense which has been trained into the finger tips. Only when this sense has been developed to a high degree can the veterinarian make a careful diagnosis of pregnancy.—*W. Wisnicky, D.V.M., Wisconsin.*

The retained dead pig, especially when it is the last one of the litter, can sometimes be handled most advantageously by injecting into the uterus 1 qt. of mineral oil to which 6 oz. of sulfurea powder have been added.—*A. W. Krause, D.V.M., Iowa.*

Skin clamps have been much more successful than suture materials for surgery of the teats. When sutures have been used, it is common experience to feel three or four days later that they should not have been used.—*D. E. Trump, D.V.M., Minnesota.*

"Repeat" breeding of the dairy cow means the loss of from 25 to 28 lb. of butterfat from that cow's production record.—*John B. Herrick, D.V.M., Iowa.*

Tracheotomy in Tetanus.—Resort to tracheotomy in the treatment of acute human tetanus (*Surgery*, Jan., 1950) recalls the use of that operation in horses during the heyday of equine tetanus. The operation curtails respiratory complications due to the collection of secretions and ingested material in the bronchial path. There would be few deaths from tetanus were digestive and respiratory complications prevented. Gastrointestinal lavage and tracheotomy in tetanus serve that purpose.

A New Method of Permanent Intramedullary Pinning

R. L. LEIGHTON, V.M.D.

Springfield, Massachusetts

THE development of any variation of technique is usually the culmination of much trial and error, with borrowings from such a number of sources that proper acknowledgment cannot be made. The present methods and materials are still undergoing changes and are awaiting opportunities for further clinical use which, in the end, will determine their usefulness and applicability. This new method is an enlargement upon the type of intramedullary pinning we have been utilizing for two or three years, varying from it in the manner of introduction of the pin, and in the fact that the pin is left in permanently.

Fig. 1—Special instruments used (left to right): (1) twisting rod or tightener; (2) special Allen screw wrench; (3) drill and handle; (4) special intramedullary pin with heavy silk suture attached; (5) special bone-gripping device.

Materials.—The following materials are needed in this method of intramedullary pinning:

1) Pins of a stainless steel (18-8-304), which apparently can be left in contact with tissue permanently without harmful effect, are shuttle shape with a small hole or holes drilled through them. Various diameters and lengths are provided to meet the needs of the individual case.
2) A special slotted rod with handle and some heavy silk.
3) A specially developed device for grasping the bone.
4) Some pointed rods 1/32 in. greater in diameter than the pin, with a suitable handle.

Application.—These pins and the method of insertion were first devised to provide permanent intramedullary pinning of those bones where our previous methods were not applicable. So far, I have used this method only in those cases where no other means seemed to offer as good a chance for recovery. In the accompanying case histories, the ulna and the radius were the type of fracture that the pins were developed for. The femur in case 2 could doubtless have been treated in other ways but offered no difficulties to this type of pinning, and the patient made a nice recovery. At present, I have some of these pins in the tibia but it is too soon to evaluate the results. In 2 cases

Fig. 2—After exposure of fracture through usual open reduction methods, fragment ends are trimmed of any callus and bone ends are "freshened."

From the Rowley Memorial Hospital, Springfield, Mass.

where the humerus was pinned, other factors supervened, preventing their use in a report. Doubtless other bones could be pinned in the same way but clinical material necessitating its use has not as yet been forthcoming.

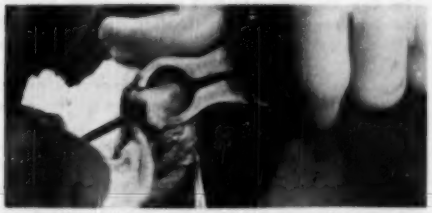

Fig. 3—Medullary cavity of upper fragment is drilled deep enough to receive special permanent intramedullary pin.

Method of Use.—The site over the affected bone is prepared for open reduction. The ends of the broken bones are exposed. In those cases where considerable callus has formed, as in cases of nonunion, the bone ends are freshened, and the fibrous material removed. The specially devised, bone-grasping tongs facilitate holding the fragments for this and subsequent procedures. After freshening the fragment ends, the medullary cavities of each

Fig. 4—Insertion of special permanent intramedullary pin into upper fragment with silk tension suture in place. Pin is inserted until only small portion protrudes. Pin should fit loosely.

are opened with the drill. The special pin with a loop or two, or more as needed, of the silk suture through the hole provided is inserted in the upper fragment, until just a small portion of the distal end of the special pin extends. Now the bone ends are approximated, the pin entering the medullary cavity of the distal fragment. Tension is applied to the silk suture by winding it on a special slotted rod. The pin is worked into position so that it straddles the break. Cutting one end of the suture allows its easy removal. The incision is closed in the usual manner. It has been our practice to splint these limbs until sufficient healing takes place.

Fig. 5—Lower fragment brought into alignment—end of pin inserted into medullary cavity. This requires considerable traction.

The following 3 case histories are presented.

Case 1.—On April 28, 1949, a male Spitz, 4½ years old, was presented in our clinic with an old, comminuted gunshot fracture of the left radius and ulna. There was a nonunion of one month's

Fig. 6—Case 1. X-ray of old gunshot fracture, left radius and ulna, with nonunion of one month's duration; infected and discharging.

Fig. 7—Case 1. X-ray showing pin in situ. Eventual healing was satisfactory and leg became functional.

duration, with an infected and discharging sinus at the site of fracture.

Amputation had been suggested but was rejected by the owner who was determined to try something new. In response to this demand, development of this method of permanent intramedullary pinning was begun.

The dog was placed on 300,000 units of penicillin every twenty-four hours. The infected area was cleaned and sulfathiazole was applied locally. By

Fig. 8—Case 2. Fractured left distal femur with posterior displacement of lower fragment.

May 13, healing of the infection had progressed to such a stage that surgical intervention was felt to be feasible. Accordingly, an open reduction was performed and the pin placed in position. The leg was kept in a yucca splint with day-to-day inspection. Temperature was normal at all times. The dog ate well and had an uneventful history. The incision was dry and healing and progressed nicely at all times. Penicillin was stopped on May 17.

On June 15, the splint was removed and on June 28 the dog was discharged, walking on a well-functioning leg.

Case 2.—On July 25, 1949, a year-old male Cocker Spaniel suffered a compound fracture of the left distal femur. Temporary traction had been instituted on July 27 and the case referred to us two days later. The dog was placed on 300,000 units of penicillin daily and the infection was

Fig. 9—Case 2. X-ray after placement of pin.

treated topically with a sulfonamide preparation, the leg being kept in a traction splint. It was not possible for us to gain proper approximation of the fragments; therefore, on August 5, the dog was operated on and a special pin placed. The leg was continued in a traction splint until August 22. Penicillin injections had been stopped on August 19. The dog was discharged on August 25, walking on his leg. He had a completely uneventful hospitalization, eating well and being entirely normal throughout his stay.

Case 3.—On November 5, 1949, we accepted an 8-year-old, male English Setter with a horribly mangled left fore leg. The radius and ulna were comminuted, and there were multiple lacerations with tremendous edema and great tissue damage, the whole leg having been severely crushed. Peni-

cillin therapy of 300,000 units every twenty-four hours was instituted and our efforts were directed toward treatment of the lacerations. The leg was temporarily splinted and furacin dressings were replaced every three days until December 14. There were two days of severe loose stools and vomiting on November 14 and 15. Penicillin was discontinued on November 16, but the dressings were continued until December 14.

Fig. 10—Case 3. X-ray showing malunion of a fracture of the left radius and ulna.

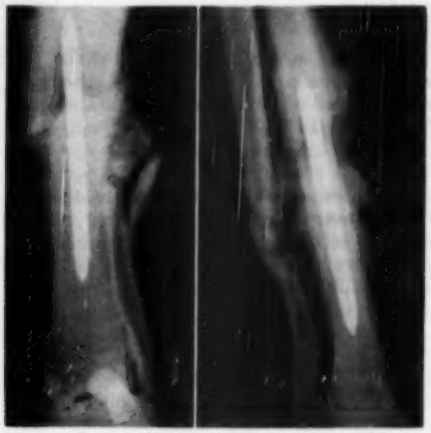

Fig. 11—Case 3. X-ray prior to discharge. The dog was able to use the leg.

With the external demand having been taken care of, we now directed our efforts toward proper treatment of the fracture, which x-rays showed to be badly aligned with the radius approximated to the ulna. There was, of course, no bony union. It was still impossible to obtain any traction on the limb. An open reduction with the placement of a special pin was performed December 2. The leg was kept in a yucca coaptation splint. Penicillin therapy was again begun and continued until December 19. The incision was at all times clean and dry. The splint was removed December 21, but it was not until January 7, that the owners saw fit to discontinue hospitalization. Some thickening of the entire limb had occurred, but it was functional and the dog walked out of the hospital with only a mild limp.

Benefits derived from use of this method are:

1) The need of traction is eliminated.
2) The fragments are held in good approximation.
3) It provides prolonged support as in chronic nonunion.
4) It has provided us with a means to secure a proper union with a functioning limb in otherwise seemingly hopeless cases.

SUMMARY

A new method of introduction of permanent intramedullary pinning is described with a report of its use on 3 cases.

"Experimental Surgery".—That C. F. Schlotthauer, head veterinarian of the Mayo Clinic, wrote the foreword of "Experimental Surgery, Including Surgical Physiology" by J. Markowitz, associate professor of physiology, University of Toronto, a book of 546 pages and 330 illustrations, price $7.00, shows the general direction of the wind in the stratosphere of medical research. Among other things, Schlotthauer declared that experimental procedures on animals are means of obtaining fundamental knowledge of physiology and of teaching surgical craftsmanship, and besides, the techniques are useful for the veterinary surgeon.

The artificial breeding organization can play a very important part in furthering research on repeat-breeding cows by helping research agencies to locate and obtain animals for study.—*L. E. Casida, Ph.D., Wisconsin.*

CLINICAL DATA

Clinical Notes

Penicillin is the treatment of choice for acute streptococcic infection of the skin and tissues of the head in mink.—*J. R. Gorham, D.V.M., Washington.*

Delay in starting carbohydrate therapy for acetonemia and not continuing it long enough seem to be important causes of its failure in pregnant ewes.—*Jesse Sampson, D.V.M., Illinois.*

Radioactive isotopes are used to a greater extent in physiologic research than in therapy. Results of therapeutic applications of isotopes have been disappointing.—*U.S. Armed Forces Med. J., March, 1950.*

Dogs have been poisoned by castor bean meal, used as a lawn and garden fertilizer. It is palatable to animals and enough of it can be licked from the ground to cause death, according to the California Department of Agriculture.

From the standpoint of effecting bacteriologic cures through interrupted therapy, procaine penicillin offers no advantage over calcium penicillin against *Streptococcus agalactiae* infection, British investigators concluded (*Vet. Rec.*, Jan. 14, 1950).

Iodine Without the Sting.—Iodine dissolved in propylene glycol and water is an effective antiseptic for human and veterinary medical use, the American Pharmaceutical Association was told at its convention in Atlantic City, May 3-5, 1950. The new formula has high bactericidal efficiency, does not sting or irritate, and has a low freezing point. The solution consists of 2 per cent iodine and 2.4 per cent sodium iodide in distilled water containing 25 per cent propylene glycol.

Radio biology opens up a whole new field to veterinarians. The U. S. Public Health Service has two veterinarians who will spend full time in radio biologic research.—*James Steele, D.V.M., Georgia.*

The dairyman has four important herd health problems: (1) get his cows bred; (2) raise the calves; (3) keep his cows free from mastitis; (4) keep brucellosis out of the herd.—*W. J. Gibbons, D.V.M., Alabama.*

In the control of any infectious livestock disease, sanitation must be a headline factor. Vaccination without sanitation has been very unsatisfactory in many herds infected with brucellosis.—*H. J. Rollins, D.V.M., North Carolina.*

Studies by Gwatkin indicated that streptomycin, in drinking water, helps to prevent death from pullorum disease if given at the time infection is introduced, but it apparently has no value when administered after symptoms appear.—*Canadian J. Comp. Med. and Vet. Sci., April, 1950.*

Studies made at the Moredun Institute in Scotland (*Vet. Rec.*, May 6, 1950) support the belief expressed by many veterinarians that cows kept in relative confinement are more susceptible to ketosis than those given liberty of movement.

Biochemical Analysis.—The first biochemical analysis to be systematically applied to a problem in veterinary medicine was the demonstration that hypocalcemia is associated with milk fever. In 1925, independent workers (Little and Wright in the United States and Dryerre and Greig in England) both discovered and recorded these findings (*Irish Vet. J.*, Jan., 1950.)

Recurrent Iridocyclitis (Periodic Ophthalmia) of Horses

I. Agglutination and Lysis of Leptospiras by Serums Deriving from Horses Affected with Recurrent Iridocyclitis

LT. COL. R. H. YAGER, V.C., and MAJOR W. S. GOCHENOUR, Jr., V.C., U.S. Army, and PSYCHE W. WETMORE, B.A.

Washington, D. C.

THE ETIOLOGY of recurrent iridocyclitis of horses has been intensively studied by Mott and Seibold.[1] Maurer and Jones[2] indicate that heredity does not appear to be an important factor in the etiology of periodic ophthalmia. The isolation of a filterable agent capable of producing symptoms of periodic ophthalmia following intraocular inoculation was reported by Woods and Chesney,[3] but this has not been confirmed. Riboflavin deficiency associated with recurrent iridocyclitis was reported by Jones, Maurer, and Roby.[4,5] In a subsequent report, Jones[6] states that the addition of riboflavin to the diet will prevent the outbreak of new cases but has little or no effect on the old cases.

Heusser,[7] in a survey of 291 normal horses and 263 horses affected with recurrent iridocyclitis in Europe, reported the presence of leptospiral agglutinating antibodies in the serums of 85 per cent of the affected horses and in less than 7.5 per cent of the normal horses. Despite failure to recover leptospiras from affected horses, and inconclusive results following artificial infection, Heusser posed the question, "Is periodic ophthalmia a leptospirosis?"

It seemed desirable to determine whether a similar correlation between recurrent iridocyclitis and the presence of leptospiral antibodies existed in the United States. This paper deals with leptospiral agglutination-lysis tests performed on the serums of 121 horses, of which 35 were affected and 86 were not known to be affected.

MATERIALS AND METHODS

A total of 10 strains of Leptospira were employed as antigens in this study. Three of the strains, *Leptospira icterohemorrhagiae*,[8] *Leptospira canicola*, and *Leptospira bovis*[8] (N.J.),[3] are known to occur in the United States. The seven additional strains, *Leptospira bataviae*, *Leptospira mitis*, *Leptospira okinawa*, *Leptospira grippotyphosa*, *Leptospira hebdomadis B*, *Leptospira heb-*

TABLE I—Agglutination-Lysis Titers Against Leptospira Pomona

Titer	Percent (0 10 20 30 40 50 60 70)	HORSES: Diseased No.	Diseased %	Normal No.	Normal %
Negative		0	0.0	43	50.0
1:10		1	2.9	18	20.9
1:30		0	0.0	12	13.9
1:100		1	2.9	3	3.5
1:300		3	8.6	1	1.2
1:1000		4	11.4	1	1.2
1:3,000		2	5.7	5	5.8
1:10,000 or higher		24	68.5	3	3.5
	Totals	35	100.0	86	100.0

Normal

Clinically diagnosed recurrent iridocyclitis

From the Veterinary Division, Army Medical Department Research and Graduate School, Washington 25, D.C.

After submission of this article for publication, Little, Beck, and McCahon published additional evidence of equine infection with bovine leptospiras as an appendix to an article entitled "An Outbreak of Bovine Leptospirosis in Pennsylvania." Vet. Med., 45, (1950): 104-110.

The authors express their appreciation to the following veterinarians for assistance rendered in obtaining the serums studied: Col. Floyd C. Sager, Major E. T. Marsh, Drs. W. E. Eggert, R. B. Gochenour, W. Allen Hughes, John R. Keeler, A. W. Patterson, Jr., and Harry W. Schoening.

domadis C, and *Leptospira pomona*[9] are not known to occur in the United States. Two of the strains employed by Heusser, *Leptospira australis* and *Leptospira sejro*, were not available for this study. Living leptospiras were employed as antigens for the agglutination-lysis tests conducted according to the techniques described by Schuffner[9] and Van Thiel.[10]

Serum samples were obtained through the cooperation of veterinarians in private practice and from research institutions. Geographically, the sources included Pennsylvania, Maryland, the District of Columbia, Virginia, Kentucky, and Indiana.

TABLE 2—Agglutination-Lysis Titers Against Leptospira Bovis (N.J.)

Titer	Percent (0 10 20 30 40 50 60 70)	Horses: Diseased No.	Diseased %	Normal No.	Normal %
Negative		0	0.0	44	51.2
1:10		0	0.0	16	18.6
1:30		0	0.0	11	12.8
1:100		5	14.3	5	5.8
1:300		4	11.4	3	3.5
1:1000		9	25.7	4	4.7
1:3,000		5	14.3	1	1.2
1:10,000 or higher		12	34.3	2	2.3
	Totals	35	100.0	86	100.0

Normal

Clinically diagnosed recurrent iridocyclitis

Serum was obtained from blood samples drawn aseptically and allowed to clot. No anticoagulants or preservatives were added to the specimens, in an attempt to eliminate false reactions due to chemical destruction of the living leptospiras which constitute the antigen.

Only those horses exhibiting typical pathologic lesions on ophthalmoscopic examination combined with a history of recurrent attacks were considered as affected. Some horses exhibiting typical ophthalmic pathology were, therefore, classified as normal.

RESULTS

Of the ten strains of Leptospira employed as antigens, only two, *L. bovis* and *L. pomona*, were agglutinated by dilutions of horse serum in excess of 1:30. Titers of 1:30 were obtained on two serums against *L. grippotyphosa* and one serum agglutinated both *L. icterohemorrhagiae* and *L. canicola* in 1:10 dilution. Agglutinating antibodies against *L. hebdomadis B*, *L. hebdomadis C*, *L. mitis*, *L. bataviae*, or *L. okinawa* could not be demonstrated in the serums examined.

The results of agglutination-lysis tests using *L. pomona* as an antigen are shown in table 1.

Serums from horses affected with recurrent iridocyclitis agglutinated or lysed *L. pomona* to some degree.[11] Fourteen per cent of these samples had a titer of less than 1:300 and 86 per cent had a titer of 1:300 or greater. Of the samples from normal horses, 51 per cent were completely negative, 37 per cent had titers of less than 1:300 and 12 per cent had titers of 1:300 or greater.

Results of agglutination-lysis tests on the same serums, but employing *L. bovis* as an antigen,[12] are shown in table 2.

Serums from affected horses contained agglutinating and lysing antibodies to some degree. Six per cent of these samples had a titer of less than 1:300, while 94 per cent had a titer of 1:300 or greater. Of the normal horses, 50 per cent were completely negative, 38 per cent had titers of less than 1:300, and 12 per cent had titers of 1:300 or greater.

Twelve serums deriving from foals 4 to 6 months of age, raised on farms where active cases of affected horses existed, failed to agglutinate *L. bovis* or *L. pomona*. Likewise, serums from 3 animals, 12 to 18 months of age, from another similar farm failed to exhibit evidence of agglutinating antibodies against these antigens. Indeed, serums deriving from 50 horses hyperimmunized against, or artificially infected with, *Pasteurella multocida*, *Streptococcus equi*, *Salmonella abortus equi*, *Clostridium tetani*, *Erysipelothrix rhusiopathiae*, *Brucella abortus*, and the viruses of vesicular stomatitis, Eastern and Western equine

*Obtained from the National Institutes of Health as *L. bovine*, N.J., C-164 and designated as *L. bovis* (N.J.) in this laboratory.

encephalomyelitis, and equine infectious anemia, were found to have no significant agglutinin-lysis titers with the exception of 5 horses hyperimmunized with *E. rhusiopathiae*. These 5 animals, upon examination, were found to have gross ophthalmic pathology consistent with lesions following recurrent attacks of periodic ophthalmia. Since no clinical history was available, these horses, for the purposes of this paper, are classified as normal animals.

DISCUSSION

In general, the work of Heusser is confirmed regarding the relationship between the presence of leptospiral antibodies and recurrent iridocyclitis of horses. However, only two strains of Leptospira, *L. bovis* (N.J.) and *L. pomona*, appear to be associated antigenically with recurrent iridocyclitis in the United States. Cross agglutination and adsorption tests have been thus far inconclusive, and leave unanswered, at this time, the question of whether *L. bovis* (N.J.) and *L. pomona* are distinct strains of leptospiras, or are biotypes of the same strain.

Isolation of leptospiras from affected horses and the production of recurrent iridocyclitis by artificial inoculation of *L. bovis* (N.J.) are being attempted.

Only serologic evidence is available at this time to support the theory that leptospiras are the etiologic agents of equine iridocyclitis. Van Thiel[12] considers an agglutination-lysis titer of 1:300 as diagnostic for leptospirosis and questions the significance of lesser titers. If this titer is accepted as significant, the relationship between recurrent iridocyclitis and the presence of leptospiral antibodies in the serum of affected animals warrants serious consideration of leptospiras as an etiologic factor in this disease.

It is possible that the agglutination and lysis of leptospiras by these horse serums may be due to the presence of heterophilic antibodies whose reactions with leptospiras have not as yet been reported. Further investigation of this possibility is being made.

SUMMARY

A series of 121 samples of equine serums were examined serologically to determine the relationship between recurrent iridocyclitis and the presence of leptospiral agglutinating and lysing antibodies. When *Leptospira bovis* (N.J.) was used as an antigen, antibodies were demonstrated to some degree in the serums of all horses affected with periodic ophthalmia, and in less than 50 per cent of the serums from normal horses. When an agglutination-lysis titer of 1:300 (against *L. bovis*) was adopted as significant, 94 per cent of the affected horses had positive titers in contrast to less than 12 per cent of the normal horses having significant titers.

Isolation of Leptospira from affected animals, or the production of the disease by artificial inoculation of *L. bovis* has not been accomplished. Only serologic evidence is available to indicate the possible etiologic role of leptospiras in recurrent iridocyclitis.

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The observant practitioner should suspect parasitism when a herd or flock lacks uniformity.—*R. D. Turk, D.V.M., Texas.*

Infectious Equine Encephalomyelitis in the United States in 1949

(Abstracted from a report dated May 31, 1950, by Dr. B. T. Simms, chief, United States Bureau of Animal Industry.)

The disease was reported from 37 states during the year (2 more than in 1948) and the total number of cases was 4,037 as against 1,796 in 1948, and 8,716 in 1947.

The general pattern of the disease and the distribution among the several states remained about the same as in former years. The average mortality is 60 per cent, and this is higher than during any of the preceding fourteen years covered by the BAI surveys. August was the peak month.

The virus-serum control division estimates that about 340,000 animals were vaccinated with two doses in 1949, although only 77,000 were reported. Of the vaccinations reported, only 11 per cent were completed before the disease became epizoötic. Louisiana reported almost 42 per cent of the total vaccinations. The disease was reported in 28 animals after completion of vaccination and of these 13 died of equine encephalomyelitis.

(See table on opposite page.)

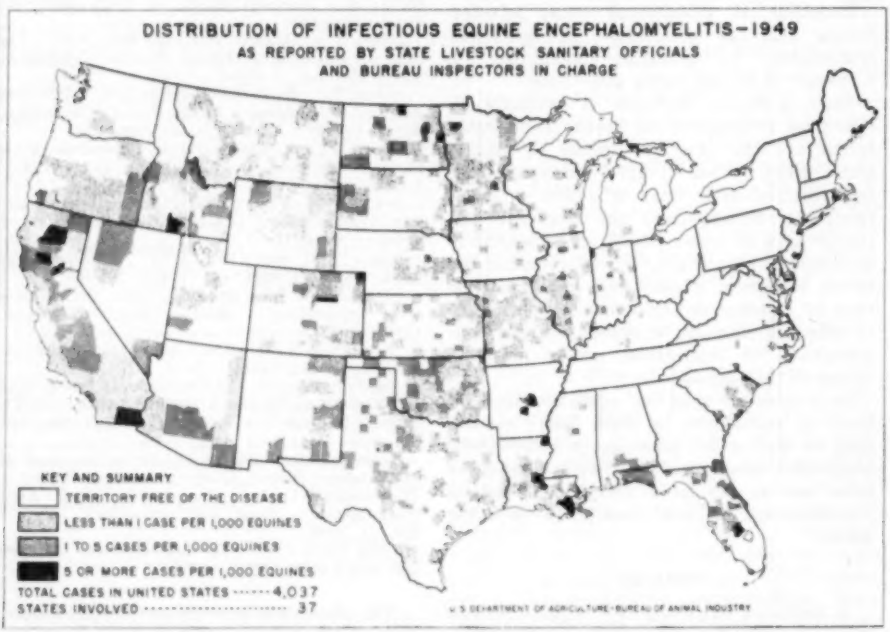
DISTRIBUTION OF INFECTIOUS EQUINE ENCEPHALOMYELITIS—1949
AS REPORTED BY STATE LIVESTOCK SANITARY OFFICIALS
AND BUREAU INSPECTORS IN CHARGE
KEY AND SUMMARY
TERRITORY FREE OF THE DISEASE
LESS THAN I CASE PER 1,000 EQUINES
1 TO 5 CASES PER 1,000 EQUINES
5 OR MORE CASES PER 1,000 EQUINES
TOTAL CASES IN UNITED STATES ------ 4,037
STATES INVOLVED ------ 37
U S DEPARTMENT OF AGRICULTURE-BUREAU OF ANIMAL INDUSTRY

Fig. 1—Distribution and degree of incidence of infectious equine encephalomyelitis in 1949.

TABLE I—Infectious Equine Encephalomyelitis. Summary of Reports on Incidence and Mortality by States, 1949.

State and division	Horses and mules in affected areas	Animals affected	Cases per 1,000 horses and mules	Total deaths	Deaths per 100 affected animals	Month of report of— First case	Month of report of— Last case
Maine	—	0	—	0	—	—	—
New Hampshire	—	0	—	0	—	—	—
Vermont	—	0	—	0	—	—	—
Massachusetts	1,360	1	0.7	1	100	June	June
Rhode Island	—	0	—	0	—	—	—
Connecticut	—	0	—	0	—	—	—
New England	1,360	1	0.7	1	100	June	June
New York	—	0	—	0	—	—	—
New Jersey	650	3	4.6	3	100	July	Nov.
Pennsylvania	—	0	—	0	—	—	—
Middle Atlantic	650	3	4.6	3	100	July	Nov.
Ohio	—	0	—	0	—	—	—
Indiana	55,092	31	0.6	14	45	May	Nov.
Illinois	217,188	122	0.6	45	37	Jan.	Dec.
Michigan	5,067	1	0.2	0	—	August	August
Wisconsin	64,921	17	0.3	7	41	May	Sept.
East North Central	343,268	171	0.5	66	39	Jan.	Dec.
Minnesota	311,356	105	0.3	28	27	May	Sept.
Iowa	61,918	21	0.3	7	33	Jan.	Sept.
Missouri	379,162	217	0.6	65	30	March	Nov.
North Dakota	133,136	136	1.0	32	24	June	Sept.
South Dakota	101,352	51	0.5	15	29	June	October
Nebraska	115,587	36	0.3	5	14	May	October
Kansas	201,092	102	0.5	29	28	Jan.	Nov.
West North Central	1,303,603	668	0.5	181	27	Jan.	Nov.
Delaware	6,829	3	0.4	3	100	August	Sept.
Maryland	3,866	1	0.3	0	—	August	August
Virginia	7,235	9	1.2	7	78	June	Sept.
West Virginia	—	0	—	0	—	—	—
North Carolina	15,085	7	0.5	7	100	Jan.	Sept.
South Carolina	33,562	23	0.7	21	91	Jan.	Nov.
Georgia	—	0	—	0	—	—	—
Florida	23,865	82	3.4	58	71	March	Dec.
South Atlantic	90,442	125	1.4	96	77	Jan.	Dec.
Kentucky	11,010	8	0.7	4	50	June	July
Tennessee	—	0	—	0	—	—	—
Alabama	25,484	19	0.7	12	63	June	August
Mississippi	25,507	14	0.5	0	—	Jan.	Sept.
East South Central	62,001	41	0.7	16	39	Jan.	Sept.
Arkansas	15,165	192	1.3	192	100	August	Sept.
Louisiana	165,939	1,525	9.2	1,498	98	May	Sept.
Oklahoma	313,975	285	0.9	75	26	Jan.	Nov.
Texas	172,098	127	0.7	39	31	Feb.	Nov.
West South Central	667,177	2,129	3.2	1,804	85	Jan.	Nov.
Montana	97,293	37	0.4	2	5	June	Sept.
Idaho	105,383	221	2.1	95	43	March	Nov.
Wyoming	68,245	56	0.8	15	27	July	Sept.
Colorado	86,111	157	1.8	30	19	June	October
New Mexico	31,640	37	1.2	14	38	June	October
Arizona	33,410	54	1.6	17	31	May	Nov.
Utah	37,228	18	0.5	8	44	June	October
Nevada	8,238	10	1.2	5	50	June	October
Mountain	467,548	590	1.3	186	32	March	Nov.
Washington	13,350	1	0.7	0	—	July	July
Oregon	59,326	52	0.9	11	21	April	Dec.
California	130,051	256	2.0	62	24	April	Nov.
Pacific	202,727	309	1.5	73	24	April	Dec.
Total or Average	3,138,776	4,037	1.3	2,426	60	Jan.	Dec.

Blackleg in Deer

LT. COL. H. L. ARMSTRONG, V.C., and MAJOR J. K. MacNAMEE, V.C.,
U.S. Army

UNTIL 1870, blackleg was considered a specific form of anthrax and was termed symptomatic anthrax. Arloing and his associates, in 1879, showed this malady to be an independent disease caused by *Clostridium chauvei*. Blackleg is recognized as an acute febrile infectious disease commonly affecting sheep, cattle and, in rare cases, swine (Kelser, R. A.: *Man. Vet. Bact., 3*, 1938:283). Blackleg in deer has not been reported previously in literature, so the recent outbreak of this infection among the deer on Aberdeen Proving Ground, Maryland, is of special interest.

During the late summer and early fall of 1949, there were an abnormal number of deaths among the deer at the above named army reservation. The entire herd was estimated at 2,500 and the total number of deaths was known to have reached more then 400. Considering the vast area involved, many acres of which are wooded land with dense vegetation, it is apparent that the death rate was much higher than officially reported. Also, since these animals were not confined to any specific tract but free to roam the entire post at will, and because of the nature of the animal involved, it was extremely difficult to obtain any deer that were showing clinical symptoms of disease prior to death, or a carcass that had not undergone extensive decomposition.

However, after much work on the part of the men assigned to this task, 2 live deer were obtained in a weakened condition and submitted for examination to the Medical Division, Army Chemical Center, Md.

CASE 1

A Virginia White-tail buck, approximately 3 years old, was captured after considerable difficulty. During the chase, it was attacked by a pack of dogs. Although the deer was alive at the time of capture, it died enroute to the laboratory.

Station veterinarian (Armstrong), Aberdeen Proving Ground, Aberdeen, Md.; and veterinary pathologist (MacNamee), Medical Division, Army Chemical Center, Edgewood, Md.

Gross examination revealed a considerable amount of frothy, blood-stained material exuding from the mouth and nostrils and a gelatinous infiltration of the muscles of the mandibular region, resulting in a pronounced swelling. The hindquarters were severely lacerated, due to the injuries inflicted by the hounds, and the tissue revealed small, purplish black, discolored hemorrhagic areas. On clinical examination, it was difficult to determine whether the possibility of this discoloration had been induced by trauma or whether some preëxisting infectious agent was present. However, this tissue had the characteristic odor of butyric acid which is produced by the fermentative action of *Cl. chauvei* upon tissue carbohydrates. The skin in the region of the neck and shoulders was intact and there was no evidence of any traumatic destruction. On manual manipulation, this tissue was crepitant, due to the presence of a small amount of subcutaneous emphysema and had the same rancid butter odor that was present in the hindquarters. The larynx and trachea were greatly congested and contained an abundance of blood-stained, frothy material. The lungs revealed a pronounced congestion with severe pulmonary edema throughout; in addition, there were multiple petechial hemorrhages in the apical lobes, but no areas of pneumonia could be seen. The pericardial sac contained a clear serous fluid and there were several diffuse hemorrhagic areas in the myocardia. The rumen, reticulum, omasum, and abomasum showed no significant changes. The small and large intestines were markedly congested. The fecal material in the large intestines was comparatively normal, both in color and consistency. The liver was greatly congested, and there was evidence of diffuse cloudy swelling throughout this entire organ. The kidneys were markedly swollen, due chiefly to infiltration of an excessive amount of blood. The spleen was greatly depleted, smaller in size than normal, and the capsule was wrinkled. With the exception of slight congestion, the bladder was normal. The

brain and meninges were slightly congested.

Microscopically, large gram-positive sporulating rods were demonstrated in the lung, brain, muscle tissue of the hindquarters, and the gelatinous material of the submaxillary region.

Toxicologic examination was not performed.

Bacteriologic examination disclosed a pure culture of a gram-positive Clostridium. This organism was identical to that of *Cl. chauvei* in morphology, its action upon laboratory animals, and its growth on differential mediums.

CASE 2

This animal was a Virginia White-tail doe, approximately 3 years old, found standing in a weakened condition on the air-strip. It presented a very dejected, dull appearance, and showed no interest in its surroundings. It did not attempt to run away from its captors. The deer was able to walk, when forced to do so, but moved with a stiff, high-stepping gait. After it had quieted down, the temperature was 104 F. and pulse 78. Examination revealed a clear serous discharge from the nasal passage, and a small amount of blood from the vulva. It did not show any blood from the rectum, nor was the hair of the tail or hindquarters stained from any previous hemorrhage or diarrhea. After observation, this animal was anesthetized with pentobarbital sodium and sacrificed by exsanguination of the right brachial artery.

Upon external examination, the conjunctiva was greatly inflamed, but no discharge was present. The larynx and trachea were slightly congested but contained no fluid material of any pathologic nature. A small amount of subcutaneous emphysema was present in the shoulder region and a large, soft swelling occupied the mandibular region, being chiefly subcutaneous and gelatinous in nature. There was moderate congestion of the lungs, both apical lobes containing petechial hemorrhages. However, no pneumonic areas were seen in either lobe. In the small intestines, the posterior two-thirds of the duodenum was highly congested, but this inflammation slowly subsided upon reaching the jejunum, so that half-way down the length of the small intestines the inflammation had completely disappeared. The remainder of the small intestines appeared normal as did the entire length of the large intestines. There was no blood in the gastrointestinal tract and the fecal material was normal in color and consistency. The liver was greatly swollen and undergoing diffuse cloudy swelling. There was much ecchymotic hemorrhage below the capsule, particularly in the caudate lobe. The kidneys were greatly congested, more markedly in the medullary substance. There was diffuse congestion of the bladder with multiple petechiae in the mucosa. The spleen was slightly decreased in size and the capsule was wrinkled. The brain and meninges showed slight congestion. There was no significant change in any of the other organs.

Microscopic examination of sections of muscle tissue obtained from the shoulder region showed that the fibers were undergoing hyaline degeneration, loss of striation, and coagulation necrosis. The fibers were, to a great extent, separated by gas bubbles, edema, and hemorrhage. This tissue revealed the presence of large, sporulating, gram-positive rods with rounded ends, in addition to some fibrin, leucocytes, and cellular débris. Examination of the lung tissue and the gelatinous material from the mandibular region, disclosed large, gram-positive rods with rounded ends.

Toxicologic examination of the liver, kidney, and stomach contents were negative for the heavy metals, DDT, and common plant alkaloids.

Bacteriologic examination and animal inoculation revealed the presence of gram-positive Clostridium having the same morphology and cultural characteristics as *Cl. chauvei* (Topley and Wilson: *Prin. Bact. and Immun., 2,* 1937: 691).

Bacteriologic cultures were taken from the gelatinous material of the mandibular region and from the lungs and were grown anaërobically for twenty-four hours. Guinea pigs injected intramuscularly with 0.25 cc. of a 24-hour culture died within thirty-six hours. The organism was then recovered from these guinea pigs from the heart blood and peritoneal fluid. At the point of injection, and in the surrounding musculature, numerous gas bubbles were present. The muscle tissue was purplish black in contrast to the normal red of the adjacent healthy muscle tissue. Healthy

rabbits injected intramuscularly with 0.5 cc. of a 24-hour culture developed only a severe local irritation at the point of injection. These animals were permitted to live five days following introduction of the culture of Clostridium into the muscle tissue, and then sacrificed. A complete autopsy was performed, with negative results. In addition, the cultures of the organism obtained from the suspected deer produced acid and gas on glucose, maltose, lactose, sucrose, fructose, and galactose; but no acid and gas on mannitol, salicin, dextrin, and glycerol. The nitrate reduction test was negative, hydrogen sulfide test was positive, blood serum not liquified, and brain medium not affected.

Hyaluronidase—The New Dispersing Agent

Hyaluronidase is an enzyme clinically useful in enhancing the absorption of fluids administered subcutaneously. It also decreases the pain associated with tissue distention in hypodermoclysis. Administration of 10 to 20 mg. of hyaluronidase caused the induration due to subcutaneous injection of fluid to disappear within ten to twenty minutes instead of sixty to ninety minutes, as in the case of the same amount of material without the use of the enzyme.

The enzyme, hyaluronidase, works on hyaluronic acid, which is a mucopolysaccharide that tends to bind water in the interstitial spaces and inhibits diffusion in the tissues. Hyaluronidase is a mucolytic enzyme which is capable of depolymerizing hyaluronic acid and reducing this effect.

When hyaluronidase was administered with 250 to 300 cc. of fluid, the total volume was delivered completely into the subcutaneous tissues in eighty minutes, and other injections could be made into the same area soon thereafter. A single injection of the enzyme maintained its effect for about five days.

In veterinary medicine, the enzyme is effective in enhancing the absorption of solutions containing glucose, calcium gluconate, protein hydrolysates, and various drugs, as well as plasma and whole blood.

Hypoproteinemia inhibits the effects of hyaluronidase, but the intravenous injection of plasma corrects the hypoproteinemia to the point where hyaluronidase becomes effective.

The quantities of enzyme injected are not associated with toxic or side effects, and results to date indicate that hyaluronidase may be employed with impunity.—*Nutrition Reviews, May, 1950: 143-144.*

What the FDA Says About Antibiotic Drugs in Feeds

The Food and Drug Administration says it does not yet know whether to classify antibiotic drugs used in feeds as nutritive or therapeutic, and that it will not attempt to give the answer "until either the feed industry or the manufacturers of antibiotics can come forward with scientific data" (*Feedstuffs*, May 20, 1950). FDA regards the use of antibiotic agents in feeds as harmless, but it wants to know more about the growth-promoting value of such drugs before allowing manufacturers to promote sales on this basis.

Aureomycin as a Growth Stimulant.—The sensational claims about the growth-stimulating action of aureomycin in livestock and poultry are being quietly investigated by scientists of the Bureau of Animal Industry. Gains of 10 to 50 per cent in aureomycin-treated stock have been reported by private investigators. The cost is not prohibitive—about $2 worth of the antibiotic per ton of feed.

Sodium Succinate in Barbiturate Poisoning.—Intravenous administration of 3 to 4 cc. or more of an 18 per cent solution of sodium succinate aided the recovery of 14 human cases of barbiturate poisoning (*Medical Times*, May, 1950). A typical cough, occurring about ten seconds after injection, was taken as an indication of adequate dosage. If the patient did not cough, the dose was repeated. Lack of toxicity is one of the advantages, and the drug has an analeptic effect without danger of producing convulsions.

Subtilin, an antibiotic drug, is reported to be effective against the virus of avian pneumoencephalitis (Newcastle disease).—*Sci. News Letter, May 27, 1950.*

Guinea-Worm (Dracunculus Insignis, Leidy 1858) Infection in a Dog

R. D. TURK, D.V.M., M.S.

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Two worms removed from the subcutis of an 18-month-old Collie were received from Dr. Chester J. Reed, 4310 Alameda St., Houston, Texas.

The worms on examination were found to be the posterior portions of adult females. One portion was 15 cm. in length and the other portion measured 17 cm. Larvae were present in both portions. The posterior end of each worm was attenuated and sharply hooked (fig. 1) and resembled, in structure and conformation, those described by Chandler[1] from raccoons as *Dracunculus insignis* (Leidy 1858). The larvae, approximately 600 mm. in length, were coiled and had long filamentous tails (fig. 2). The identification of these worms was later confirmed by Dr. Chandler.

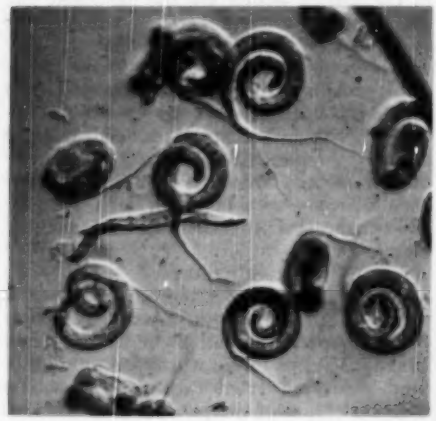

Fig. 1—Larvae from uterus of female Dracunculus, showing characteristic coiled shape and long filamentous tail.

According to the history as given by Dr. Reed, the Collie developed lameness first in the right hind leg. The lameness increased and a painful swelling appeared just above the hock. A short time later, a similar swelling occurred on the left leg. On April 8, several days after the first lameness was noted, the pain had increased to such an extent the dog refused to use his hind legs.

At 11:00 a.m. on April 10, a worm was observed by the owner to be emerging from an opening in the swelling on the right leg. It was removed by the owner and brought to the hospital for identification. Three hours later, a worm was noted protruding from an opening in the swelling on the left leg and the dog was presented for treatment.

The left leg showed only the original wound, together with a considerable amount of localized edema. The right leg was markedly swollen, appeared to have a definite encapsulated area, and pus formation was evident. The original opening was

Fig. 2—Posterior portions of female Dracunculus, showing hooked tail characteristic of this genus.

Dr. Turk is head, Department of Veterinary Parasitology, A. and M. College of Texas.

enlarged and the leg opened further to facilitate drainage. A third worm was found and removed. The dog used both legs six hours after removal of the worms and made an uneventful recovery.

No microfilariae were observed in the blood samples or in the edematous fluids in or around the encapsulated areas. Specific search was made for microfilariae because of a previous case in which a pendulous collection of fluid was present around and above the hock joint on one leg. In this instance, an extremely high concentration of living microfilariae were present in the fluid, although no adult worms were found. (This case responded to fuadin therapy.)

Benbrook[1] reported the occurrence of guinea worm in a dog in North Dakota and at the same time reported finding a guinea worm in a mink in Iowa. He also reviewed Dracunculus parasitism and summarized the life cycle in this report.

Several cases of guinea-worm infection have been reported from mammals in the Western Hemisphere. Dikmans[6] summarized all the known cases in the United States and, at the time of his report, the guinea worm had been reported from dogs only twice: once in North Dakota and once in South Carolina. Recently, Benbrook[2] received a guinea worm taken from a dog near Waterloo, Iowa. The parasitized mink reported in 1936 also was from near Waterloo.

According to Chandler,[3] the worms have not been found with any degree of regularity in any mammals in the Western Hemisphere, except in raccoons. He reported raccoons in eastern Texas to be commonly infected, the worm usually occurring in the hind feet. This report brings the total number of reported cases in dogs to 4 in the United States.

The Old World guinea worm, *Dracunculus medinensis*, has been known since ancient times and still is an important parasite from central India to Arabia. According to Chandler,[4] in many villages in central and western India, 25 per cent or more of the population may harbor guinea worms. The New World guinea worms are very similar to those of the Old World, except that they are smaller. Whereas the Old World adult female reaches a length of 2.5 to 4 ft., those in this hemisphere are 16 in. or less. Infections are rare in animals of the Old World, in spite of their frequency in human beings; in the New World, animal infections are common and human infections are rare, if they occur at all. Chandler[5] considers the guinea worm of the Western Hemisphere a separate species, *Dracunculus insignis*.

In India and Africa, the infection is associated with step-wells or ponds, where people stand foot- or knee-deep in water to fill containers with water harboring the infected intermediate host (Cyclops); meanwhile, the parent worm has an opportunity to eject her larvae, thus serving as a further source of infection. Habits of people in the United States are not favorable for the completion of the guinea worm's life cycle; however, it is possible that the species of guinea worm occurring in the Western Hemisphere might be infective to people should infected Cyclops be ingested. As long as the infection is confined to wild animals, the possibility of infection is probably remote; however, if the infection should become established in dogs, the possible chances of infection in people may be increased.

SUMMARY

A report is made of the occurrence of a naturally occurring guinea-worm (*Dracunculus insignis*) infection in a dog from Houston, Texas. This worm has previously been recovered from raccoons in eastern Texas. Because of the possible public health significance, all cases of this infection occurring in dogs should be reported.

References

[1]Benbrook, E. A.: The Occurrence of the Guinea Worm, *Dracunculus Medinensis*, in a Dog and in a Mink with a Review of this Parasitism. J.A.V.M.A., *96*, (1940):260-263.

[2]Benbrook, E. A.: Personal communication (1950).

[3]Chandler, Asa C.: The Guinea Worm, *Dracunculus Insignis* (Leidy 1858), A Common Parasite of Raccoons in East Texas. Am. J. Trop. Med., *22*, (1942):153-157.

[4]Chandler, Asa C.: Introduction to Parasitology. John Wiley and Sons, N. Y. 8th ed., (1949):469-470.

[5]Chandler, Asa C.: Personal communication (1950).

[6]Dikmans, G.: Another Case of Guinea-Worm Infestation in a Dog in the United States. Proc. Helm. Soc. of Washington, *15*, (1948):39-40.

Cottontail rabbits have been implicated in the spread of bubonic plague.—*Public Health Reports, May 26, 1950.*

Apomorphine in Dogs

MARCUS M. MASON, B.S., M.S., D.V.M.

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IN GENERAL canine practice, the need for a rapidly acting, easily administered emetic is obvious. The ingestion of foreign bodies, the consumption of large amounts of fermentable food, the need to empty the stomach for surgical procedures are but a few of the many reasons. It is generally conceded that apomorphine hydrochloride will accomplish these ends with a minimum of time and effort to the practitioner and a minimum of handling of the patient. If administered in the proper dosage, it leaves the least residue of medication, and has practically no side effects.

The present investigation was undertaken during a study on the vomiting center in relation to motion sickness in dogs. An attempt was made to induce vomiting in dogs with the least amount of apomorphine. It was apparent that most of the recommended doses were far in excess of the amount needed.

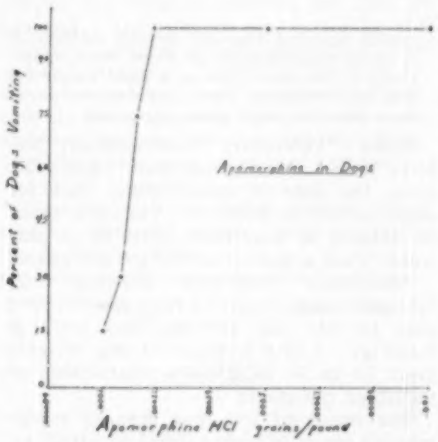
The usual hypodermic tablets distributed to physicians and veterinarians contain 0.1 gr. of apomorphine hydrochloride. This is usually dissolved in sterile water or saline solution and is injected subcutaneously. The following excerpts from the human and veterinary texts will amply describe the physiology and recommended posology for apomorphine.

Thienes[4] in his "Fundamentals of Pharmacology" writes:

> Apomorphine acts by stimulation of the emetic center of the medulla oblongata, or by increasing its sensitivity to normal sensory impulses arising in the body. This is demonstrated by the fact that the intravenous emetic dose is smaller than the oral dose and that an intravenous injection will cause vomiting movements of the skeletal muscles of cats from whom the stomach and bowel have been removed. Very small amounts injected into the fourth ventricle cause vomiting. Apomorphine HCl U.S.P.: 5 mg. (1/12 gr.). Calculating this dose on the basis of being administered to a 150 lb. man the dose would be .00055 grains per pound body weight.

Goodman and Gilman[1] in "Pharmacological Basis for Therapeutics" write:*

> The main action of apomorphine is to produce emesis by central stimulation of the vomiting mechanism. The drug does not cause gastric or oropharyngeal irritation, and is considerably more effective when parenterally administered than when given orally. Vomiting occurs within 10 to 15 minutes after hypodermic injection and is preceded by nausea and salivation. Apomorphine given orally is more uncertain in action, even when twice the hypodermic dose is used. Other central excitatory effects are restlessness, tremors, polypnea, and rarely, convulsions.
>
> Apomorphine in addition has a central depressant action especially if large doses are employed. Even small non-emetic doses of apomorphine may at times be hypnotic, and when a patient is already depressed full therapeutic amounts may fail to cause vomiting and may increase the intensity of the depression.



Graph 1.

Clinical Accidents. The indiscriminate use of apomorphine as an emetic cannot be too vigor-

This project was financed by G. D. Searle and Company, Chicago, Ill.

*Goodman and Gilman: Pharmacological Basis of Therapeutics. Copyright 1941 by The Macmillan Company and used with their permission.

ously condemned. Collapse, coma, and even death have occurred, especially if the patient is in shock from corrosive poisons, or narcotized from overdose of sedatives. If vomiting does not result from the first dose of apomorphine, a second injection should not be given. Patients too inebriated to stand unaided are too greatly depressed to permit the safe use of apomorphine.

Dosage. The emetic dose of apomorphine hydrochloride is five to ten mgm., the latter being the maximum dose. Although the drug is readily absorbed from all mucosal surfaces, it is given hypodermically to insure exact dosage. Using a 150 pound man as a basic weight the dose recommended above for humans varies from .00055 to .0011 grains per pound.

TABLE I—Summary of Parenteral Use of Apomorphine

Dogs Used (No.)	Apomorphine gr./lb.	Dogs vomiting (%)	Ave. time to vomit after injection (min.)
	SUBCUTANEOUS		
6	0.0001	16.6	10.0
12	0.0002	75.0	10.0
3	0.00015	33.3	15.0
4	0.00025	100	10.0
4	0.0005	100	5.25
4	0.001	100	6.25
6	0.00132 to 0.00416	100	5.5
	INTRAVENOUS		
3	0.000025	0	—
1	0.00005	100	3.0
2	0.0001	100	2.0

Milks' "Veterinary Pharmacology, Materia Medica and Therapeutics,"[2] page 276, gives the dose of apomorphine HCl for dogs as 0.03 to 0.166 gr. Taking a range of weights in dogs from 10 to 50 lb. this would yield a dose of 0.0033 gr. per pound.

"Banham's Veterinary Posology" by Ironside,[3] page 3, gives a more conservative dose for the dog, varying from 0.025 to 0.125 gr. Using a range of dog weights from 10 to 50 lb. gives a relationship of 0.0025 gr. per pound.

The range of the four dosages recommended above is from 0.00055 to 0.0033 gr. (ave. 0.00194 gr.) per pound body weight. The recommended veterinary doses are five times greater than the doses for human beings on a weight basis.

These trials extended over a period of months, and involved 20 dogs which varied from 9 to 75 lb. They were representative in age, sex, and breeds. The subcutaneous injection of apomorphine was used in 33 trials. The solution was made in isotonic saline and 5 per cent dextrose. The dosages ranged from 0.1 to 0.005 gr. Vomiting occurred in 27 dogs in three to twenty-three (ave. 8.3) minutes after injection. Six dogs were given apomorphine intravenously. When vomiting occurred in these cases, the time between injection and emesis was only two to three minutes.

Table 1 illustrates the data. A graphic representation of the correlation of the weight of the dog to the amount of apomorphine needed for emesis proves to be a straight linear relationship. This means that no matter whether a 5-lb. dog or a 75-lb. dog is being treated, the dose per pound remains constant.

DISCUSSION

It is obvious that dogs have been overdosed for years, if practitioners have been following the recommended doses prescribed by the accepted texts. Why the veterinary doses are higher than the human doses is certainly not clear. The data show that most of the recommended veterinary doses are 15 times greater than need be. It is well to heed the warning sounded by Goodman and Gilman in relation to overdosing, especially of patients already depressed and toxic due to corrosive poisons. Apomorphine should not be used in dogs to counteract the swallowing of suspected poisons, unless the drug can be given within two hours after the suspected material has been consumed. If the drug is being used to bring up some foreign body, then it is important to use as small a dose as possible to prevent tearing, hemorrhage, and depression. It was interesting to note in this work, that when the extremely small but effective doses were used, how short was the duration of the vomiting, and how transitory was the total effect of the drug.

SUMMARY

1) Apomorphine is the most effective and most suitable emetic for dogs.

2) The effective dose of apomorphine hydrochloride administered under the skin is 0.00025 gr. per pound of body weight.

3) This dose is only 1/10 to 1/15 of the dose recommended in the veterinary texts.

4) The intravenous dose is from ¼ to ½ the subcutaneous dose.

5) The smaller the effective dose, the less danger there is to the patient of persistent

vomiting, depression, collapse, and even death.

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[2]Ironside, W. J.: Banham's Veterinary Posology. 7th ed., Bailliere, Tindall, and Cox, London, 1943.

[3]Milks, H. J.: Practical Veterinary Pharmacology, Materia Medica and Therapeutics. 6th ed., Alex Eger, Chicago, 1949.

[4]Thienes, C. H.: Fundamentals of Pharmacology, Hoeber, New York, 1946.

"Why Your Doctor Plays It Safe"

No wonder drug is any more wonderful than the knowledge of the doctor who administers it. The popular story on scientific or medical subjects unfolds the benefits of each new discovery and holds forth hope to thousands who have been unsuccessfully treated by older methods. In the medical literature, a considerable discussion is devoted to the failures, limitations, and hazards of the various methods of treatment, but these never get into the popular press.

It is time for someone to speak out against the exploitation of the sick by opportunists who, quite unlike the old medicine-showman, wear a mantle of reputability and talk as if they knew science and understood its rules of evidence. Hope is the priceless ingredient of good medicine, and it is unthinkable that anyone would adulterate it by exaggerating the value of a treatment or its promise of cure.

There is great danger that doctors who want to be up to the minute will go overboard on new methods which look good in the original experiments, but do not stand up under the acid test of general use in thousands of cases. For the few who jump on every pharmaceutical bandwagon, there are also a few old fogies, but between the two there is a large group of doctors of all ages who prefer to exercise discretion and judgment in the use of new products. These men dread the excited announcement of each new medical experiment, because their patients put so much pressure on them to use the latest drugs and treatments that they are sometimes forced to use them against their better judgment.

The facts of a case as reported in an experiment are one thing, but the interpretation of these facts is quite another. When the interpretation is made by a salesman, it may be entirely different from that which would be made by a professional man.

The real miracle drugs are those that have withstood the test of time and usage. The finest cures are meaningless if they are based on the wrong diagnosis. Sloppy diagnosis is one of the greatest sins of which a medical or veterinary medical practitioner can be accused.

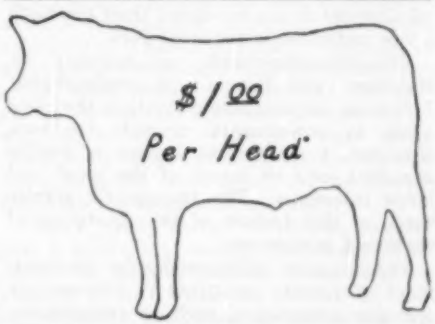
The practitioner must know when to use the sulfonamide drugs, which one to use, how much to use, how long to use it, what the drug does inside of the body, and what toxic reactions must be guarded against in its continued use. The same holds true for the antibiotic agents.

Nature has equipped the body with the system of interlocking and compensating mechanisms for normal functions and for defense against disease. Doctors and drugs still act mainly as nature's helpers.

Research doctors try hard to get good results and research patients try hard to get well. The patients get more care and attention along with their medicine than do ordinary patients. Therefore, favorable responses to some of these experimental projects are not maintained under routine care and treatment by the rank and file of doctors among the rank and file of patients.

From Science Digest, July, 1950: 33-37.

I wouldn't attempt to diagnose any swine disease without taking temperatures.—*W. A. Aitken, D.V.M.*



Loss from Cattle Bruises

The American Meat Institute reports that during February 1950 the average loss of all cattle in Chicago was $1.00 per head from bruising. Eight per cent of the cattle marketed were bruised.

Phthalylsulfacetimide (Thalamyd) in Veterinary Medicine

GEORGE ROGOFF, D.V.M.

Bronx, New York

DIARRHEAS and dysenteries have plagued the small animal practitioner for many years. These conditions have been attributed to many and varied causes. Parasitic, protozoic, and bacterial infection have been suggested. Ingestion of foreign substances, faulty diets, allergies, and many more have been seriously considered. Craige[1,2] isolated the Proteus species from the stools of dogs with diarrhea. Some of the streptococci and the coliform group have been isolated similarly. Species of the Shigella genus have been found in canine dysentery. In general, the opinion is held that many factors are involved in the etiology of this common condition. Secondary bacteria invade the lesions already present and lead to further damage (inflammatory reaction, sloughing of the mucous membrane, or ulceration). Until these bacterial invaders are controlled, the intestines do not readily undergo repair, and healing is retarded.

Bryan,[3] using succinylsulfathiazole *in vitro* demonstrated a marked bacterostasis of *Escherichia coli*. He also reported improvement when using this drug in dogs with diarrhea.

Henderson *et al.*[4] noticed that the bactericidal action of phthalylsulfacetimide (thalamyd) in the intestinal tract produced a vast reduction in bacterial flora.

Phthalylsulfacetimide, as reported by Heineken and Seneca,[5] is unabsorbable. Following the oral administration, the blood levels in experimental animals are zero. However, a substantial amount is readily absorbed into all layers of the small and large intestines. The therapeutic significance of this feature of the absorption of thalamyd is apparent.

The choice of sulfonamides for the treatment of enteric infections is between absorbable derivatives, such as sulfadiazine, or the unabsorbable type, such as succinylsulfathiazole. Sulfadiazine is regarded as reaching the infected intestinal wall through the circulation,[6] where an effective concentration must first be built up. With succinylsulfathiazole, the action is "essentially restricted locally to the contents of the bowel."[7] The disadvantage of the absorbable compounds is the possible accompanying toxicity. The disadvantage of the unabsorbable compounds is the delayed, limited effectiveness of an agent, largely confined, in high concentrations, to the gut. Since thalamyd actually penetrates the cells of the gut wall instead of merely being present in the lumen, it possesses clinical importance in direct therapy of infection of the intestines.

These preliminary reports on thalamyd as an effective bacteriostat in intestinal flora induced me to use it in the common diarrheal condition of dogs.

CASE REPORTS

Clinical Studies.—The present study includes 12 dogs over a period of six months. The dogs, when presented, had a diarrhea ranging from watery to mucous stools streaked with blood, or pure bloody stools. Tenesmus, distention, flatulence, and dehydration accompanied the prolonged untreated cases. The ages ranged from 4 weeks to 5 years. In some dogs, *Toxascaris canis* were demonstrated. Eight illustrative cases are cited.

Posology.—The most effective doses, and at the same time the most economical, are: in small or toy breeds up to 10 lb., 2 to 3 gr. per pound of body weight in divided doses. In dogs 10 to 30 lb., 1 to 2 gr. per pound of body weight in divided doses. In dogs over 30 lb., 1 gr. per pound of body weight. Higher doses have been administered, and they are no more effective than the minimum dose herein recommended. Because thalamyd is not absorbed into the blood stream, large doses are nontoxic. Treatment should continue for at least three days and should be accompanied with a bland diet. Adjunct medication is indicated in severe tenesmus, dehydration, and anemia.

Case 1.—A female Irish Setter, 6 months old, weighing 22 lb., showing a severe diarrhea, blood-tinged, and with foul odor, was presented. Severe tenesmus and distention were noted. The temperature was 102 F. There was a loss of weight and depression. Microscopic examination revealed eggs of *T. canis*. The dog had been treated with some adsorbent medication for three days prior to examination, with no improvement. Thalamyd was administered, 45 gr. daily in

divided doses, for three days. A diet of rice and meat was also given. In twenty-four hours, tenesmus had been reduced, and in seventy-two hours there was a normally formed stool. The dog became bright and alert, and gained weight for two weeks, as which time she was wormed. She was reëxamined periodically for two months with no recurrence of the diarrhea.

Case 2.—A Miniature Pinscher, 4 years old, weighing 6 lb., was presented for examination. The dog was a picky eater and any change in diet would produce a diarrhea. The owner treated the dog himself with some adsorbent mixture, and noted improvement. Examination revealed a blood-tinged stool, a temperature of 102 F., and flatulence. The animal was alert and showed no other clinical manifestations. Treatment consisted of 15 gr. of thalamyd daily in divided doses for three days. The stool was normal in thirty-six hours, but medication was continued for the full three days. The diet was changed daily, with no recurrence of the diarrhea. The owner reports that the ration has been changed many times without a recurrence of diarrhea.

Case 3.—A male mixed Collie, weighing 40 lb., was presented for examination after having been treated two weeks previously with a kaolin mixture, with little relief. The dog was listless and having 10 bloody evacuations daily. The bowel was distended with gas, and was painful on pressure. Stool examination was negative for parasites. Morphine, ¼ gr., and atropine, 1/150 gr., were administered. Thalamyd, 60 gr. daily in divided doses, was given for three days. A soft stool was noted in forty-eight hours and a normal stool in seventy-two hours. In six months there has not been a recurrence.

Case 4.—A female Miniature Schnauzer, 2 years old, weighing 14 lb., with a severe bloody diarrhea, was presented. The owner reported 10 to 20 small stools daily, some mixed with blood, others of pure blood. The dog lived in the house and was exercised on the leash; hence, was never out of the owner's sight. The diet was meat and vegetables, the meat varying daily. The treatment was ¼ gr. of morphine and 1/150 gr. of atropine sulfate. Thalamyd, 28 gr. daily in divided doses, was given for three days. A bland diet was recommended. In forty-eight hours, the stools were normal and have remained so for six months.

Case 5.—A male Irish Terrier, 4 months old, weighing 9 lb., was purchased from the local pet shop. The dog had been in the owner's possession forty-eight hours when it began having diarrhea. Treated by another veterinarian with a kaolin and bismuth mixture, it showed no improvement. The dog when presented to us was manifesting a bloody diarrhea and a temperature of 102.4 F. The stool was negative for parasites. Twenty-eight grains of thalamyd daily in divided doses was given for three days. A normal stool was noted in seventy-two hours.

Case 6.—A Cocker Spaniel puppy, 8 weeks old, and recently purchased, was presented showing a severe diarrhea. There were 8 to 15 small stools daily, mixed with blood. The puppy was alert but anorexic. Examination revealed a mild infection with *T. canis*. The temperature was 102 F. There was abdominal distention. A prophylactic dose of distemper antiserum was administered. Thalamyd, 15 gr. daily in divided doses, was given for three days. The owner reported relief in forty-eight hours and a normal stool in seventy-two hours. This puppy was wormed one week latter.

Case 7.—A male Boston Terrier, 2 years old, weighing 22 lb., was presented. He had excessive salivation, with a distended abdomen which was painful on pressure. Diarrhea was severe and bloody; temperature 102 F. The dog had been given packaged worm medicine at home. Treatment consisted of a kaolin mixture, 1 teaspoonful after every movement. In twelve hours, the stools were white and soft, and the dog showed abdominal distress. Morphine, ¼ gr., and atropine, 1/150 gr., were given along with 30 gr. of thalamyd in divided doses daily for three days. At the end of that time the stools were normal.

Case 8.—A litter of 5 Miniature Pinschers, 4 weeks old, varying in weight from ½ to 1 lb., were presented. They were beginning to look weak and unthrifty. All had diarrhea and some showed specks of blood in the stools. The fecal examination revealed a moderate *T. canis* infection. All were given distemper antiserum. Seven grains of thalamyd daily in divided doses were administered for seventy-two hours. The stools were less frequent in forty-eight

hours and normal in seventy-two hours. All the puppies started to pick up. They were kept on a rice diet for four weeks. When they reached the age of 8 weeks, 2 of the stronger and larger puppies were wormed. In forty-eight hours, diarrhea commenced, and these 2 were given 7.7 gr. thalamyd daily in divided doses. In twenty-eight hours, normal stools were obtained. The 3 remaining puppies were kept on a special diet until they were 10 weeks old, at which time they were wormed with no complications.

SUMMARY

Thalamyd is the sulfonamide of choice, where an intestinal infection or disturbance is noted. The routine administration of thalamyd without toxic reaction, for diarrhea, is routinely practiced.

In dogs presenting a parasitic infection, together with weakness and diarrhea, and unable to tolerate worming, effective therapy must be directed to the damaged intestinal mucosa by reducing the bacterial load through the use of thalamyd.

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[3]Bryan, A. H.: Sulfasuxidine, Succinylsulfathiazole in Veterinary Practice. J.A.V.M.A., *102*, (Jan., 1943):22-25.

[4]Henderson, E., Seneca, H., and Lehr, D.: Phthalylsulfacetimide (to be published).

[5]Heineken, T., and Seneca, H.: Phthalylsulfacetimide in Ulcerative Colitis. Rev. Gastroenterol., (Aug., 1948):611-618.

[6]Hardy, A. V.: Studies in Acute Diarrheal Diseases. Further Cultural Observations on Relative Efficacy of Sulfonamides in Shigella Infections. *Pub. Health Rep., 60*, (Sept., 1945):1037-1024.

[7]Poth, E. F., and Knotts, F. I.: Clinical Use of Succinylsulfathiazole. Arch. Surg., *44*, (1942):208-222.

Cross-Infection with Human and Bovine Actinomycosis.—Studies at the Mayo Clinic have confirmed that there are two distinct species of anaërobic Actinomyces: *Actinomyces israeli* and *Actinomyces bovis*. Usually, the former is responsible for human cases and the latter for bovine cases, but there is evidence that cross-infection occasionally occurs.—*Proc. Staff Meet., Mayo Clinic, Feb.* 15, 1950.

Notes on Brucellosis

Streptomycin-resistant variants of all three species of Brucella have been selected. —*B. T. Berman, D.V.M., Wisconsin.*

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The ring test does not help to determine whether a blood titer is the result of vaccination or of herd exposure.—*M. H. Roepke, Ph.D., Minnesota.*

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Dry cows and bulls can not be tested by the ring test. Therefore, the test can not be used to determine the official status of the herd in a brucellosis-control program. —*W. N. Plastridge, Ph.D., Connecticut.*

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One difficulty in making a definite diagnosis of brucellosis is that the disease can easily be superimposed on other diseases. —*S. H. McNutt, D.V.M., Wisconsin.*

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Brucella infections with the *suis* and *melitensis* strains in cows do not usually result in abortion.—*C. A. Manthei, D.V.M., Maryland.*

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All stallions used for public service must be submitted to an annual physical examination for soundness and fitness and freedom from disease. Why is this requirement not applied to bulls, especially those in artificial insemination rings?— *W. L. Boyd, D.V.M., Minnesota.*

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I am disappointed in our newer drugs on human brucellosis. Failures and relapses have occurred to an extent which make us fairly pessimistic about aureomycin and chloromycetin.—*W. C. Eisele, M.D., Illinois.*

Accredited Herd Testing in New York

The Committee on Accredited Herd Testing of the New York State Veterinary Medical Society has proposed that accredited veterinarians establish county groups to evaluate and check on the current status of disease-control work. The committee believes that such groups should meet semiannually or oftener, and that all participating veterinarians who have been assigned territories should make diligent efforts to render prompt service in calfhood vaccination, brucellosis blood testing, and tuberculin testing.—*Vet., News, March-April, 13, 1950; 12.*

Malignant Melanoma of the Oral Mucosa in a Dog

M. L. POVAR, D.V.M., and RALPH POVAR, D.V.M.

East Providence, Rhode Island

ON JAN. 31, 1948, a 9-year-old, black and white, male Cocker Spaniel was admitted to the hospital with a large pigmented mass growing from the buccal membrane of the mouth. The tumor measured 3.8 by 7.6 cm.

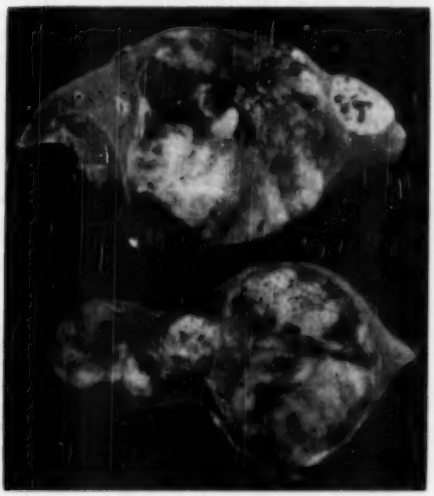

Fig. 1—Metastatic malignant melanoma in sections of the lung found at necropsy.

and was so attached that it could be removed without interfering with the cheek or tongue. Examination revealed slight enlargement of the submaxillary and parotid lymph nodes, but because of the inflammation in the area it was not certain that the enlargement was due to metastasis. The animal ate well and was in fair condition.

The owners wished the tumor to be removed even though metastasis probably had already occurred. The operation was performed the following day under nembutal anesthesia, using an electric cautery. The mouth healed very rapidly and the animal was discharged on February 12 in excellent condition. The lymph nodes about the head had decreased to nearly normal size.

The surgical specimens from this case were sent to the Registry of Veterinary Pathology, Armed Forces Institute of Pathology, Washington, D. C. The following report (AFIP Accession 202666) was returned:

Gross.—The specimen consists of an irregular, ovoid mass of tissue measuring 8.0 x 5.5 x 3.5 cm., fixed in formalin. Its surface is irregular, gray in

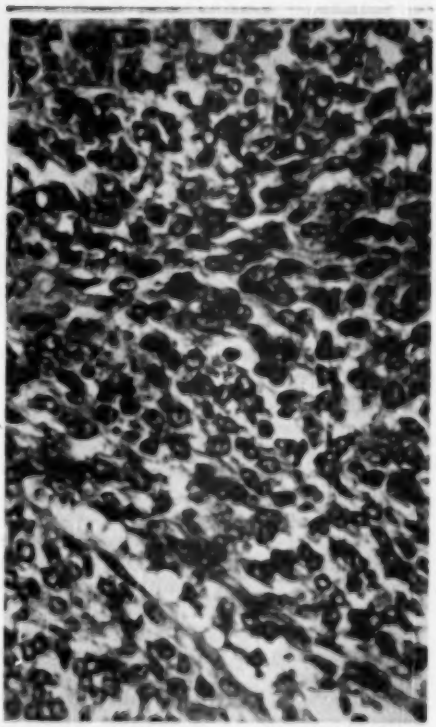

Fig. 2—Malignant melanoma in lung. x 500. The photomicrograph is taken in an area devoid of melanin pigment.

A selected case from the Registry of Veterinary Pathology, Armed Forces Institute of Pathology, Washington, D. C.

color, with some dark hemorrhages. The cut surface reveals multilobulated, sharply demarcated areas of gray material with a few superficial zones of jet black. There are central areas of necrosis.

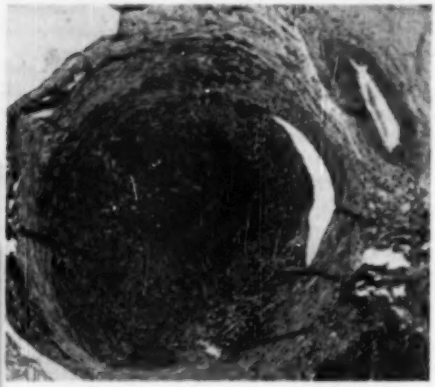

Fig. 3—Malignant melanoma, tumor thrombus in a renal artery. x 70. Note that the tumor is firmly attached to the arterial wall, has invaded it in some places, and has almost completely obliterated the lumen.

Microscopic.—The new growth is made up of epithelial cells which are supported and separated into indistinct lobules by bands of collagenous connective tissue. The epithelial cells vary in size and shape and are often elongated, with ovoid, finely stippled nuclei, usually having a single nucleolus. In some areas the cytoplasm contains melanin granules, while in others it is completely amelanotic. Mitotic figures are numerous. Areas of necrosis and inflammation are common.

Diagnosis.—Malignant melanoma, mucous membrane of mouth, canine.

On March 10, 1948, the dog was returned for a check-up and at this time there was evidence of metastasis to the lungs. Dyspnea, râles, and crepitation were prominent symptoms. Although the prognosis was unfavorable, the owner was unwilling to give up the dog.

On March 14, the dog collapsed, gasping for air, but then slowly recovered. The following day, it was admitted to the hospital for euthanasia and autopsy.

Autopsy revealed heavy invasion of melanotic tumor in all the lymph nodes of the head and neck. The lungs, pericardium, and liver were heavily invaded by metastatic tumor (fig. 1). Metastases were also found in the adrenals and one kidney.

The following report of microscopic observations of the necropsy specimens was received from the Armed Forces Institute of Pathology:

Lung.—The lung contains many metastatic nodules of varying size. The cells in some areas tend to be spindle-shaped, and scattered cells contain melanin (fig. 2). In some nodules there is no pigment. Mitotic figures are very common. Areas of hemorrhage and necrosis are seen in the tumor. Siderocytes and lipoid histiocytes are numerous in the alveoli of the adjacent lung parenchyma.

Kidney.—A circumscribed metastatic tumor nodule occupies the subintimal stroma of a vein and protrudes into the lumen, almost completely occluding it (fig. 3). The tumor thrombus is seen near the renal pelvis, and distal to it is a sharply demarcated zone of sclerosis in the medulla and cortex. The new growth is obviously of the same type as that in the other organs.

Liver.—There is central congestion and fatty infiltration throughout the section. An occasional small thrombus is seen in the hepatic arteries, but the section does not include frank neoplastic elements.

Diagnosis.—Malignant melanoma, primary in oral mucosa with metastases to lung, kidney, pericardium and liver.

Brucellosis Prevention

The continued high incidence of brucellosis in both animals and man indicates that far too much of the past work with this disease has been presumptive and inconsequential. From the very beginning, animals (goats, cows, pigs) have been known to constitute the reservoirs and primary sources of this disease for man.

Human contact with brucellosis-infected animals and animal carcasses represents an even greater transmission possibility than the consumption of unpasteurized milk and dairy products, according to the newer concept of workers in this field. Nevertheless, there remains a reluctance to extend brucellosis-control efforts to include the animal sources and the transmission possibilities which have been disclosed by study.

Human brucellosis investigations must recognize all of the possible animal sources of disease and the concomitant animal to human transmission possibilities. Otherwise, there can be no brucellosis eradication nor brucellosis prevention.—*L. R. Davenport, D.V.M., Illinois.*

Some degree of success may attend prophylactic treatment of animals by those who know not what they do, but it requires a veterinarian to successfully treat the sick animal.—*W. B. Redman, D.V.M., Iowa.*

Gleanings from Reports of AVMA Committees

Parasitology.—This report emphasizes that adequate control of parasitic diseases will never be accomplished by chemotherapy alone but is dependent upon prevention.

Actually, the picture is much the same today as it was thirty years ago when most of the best methods of parasite control first became available. Before we veterinarians can convince livestock owners of the benefits to be derived from a planned program of parasite control, it will be necessary for us to convince ourselves of its value.

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Ethics.—Veterinarians in some states have been asked by local groups to join them in placing "cards" or literature in the homes of newly arrived persons in the community. This type of advertising, sometimes referred to as the "Welcome Wagon," is not professional or ethical for veterinarians. It is a form of advertising that has no place in veterinary medicine.

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Nutrition.—In the computation of rations, one must keep in mind that these may become unbalanced due to the added growth response obtained from vitamin B_{12}. Therefore, the recommended levels of other nutrients should be given careful consideration.

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Diseases of Small Animals.—A committee should be appointed to study the planning and operation of a combination large and small animal hospital. Veterinarians in many communities are rendering a more complete and satisfactory professional service to their clients with the facilities of the combination hospital.

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Diseases of Food-Producing Animals.—Replies to a questionnaire indicate that there is an ever-increasing interest in nutrition in its relation to disease. Continued emphasis on courses in nutrition in the preveterinary and veterinary curriculums will result in a better understanding of this problem in relation to disease, and subsequently to a better veterinarian-client relationship.

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Poultry Diseases.—The Committee feels that satisfactory progress is being made in the control of certain bacterial and virus infections through the serologic and immunologic approach, but deterioration is apparent elsewhere.

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Artificial Insemination.—The Committee recommends that schools of veterinary medicine encourage graduate study among veterinarians in courses on animal reproduction and artificial insemination, extend an improved undergraduate course in these fields, and conduct conferences and clinics for veterinarians in these subjects. Further recommendations are that a division be made between the uterine examination by lay inseminators and veterinarians. Whenever inseminators believe they recognize abnormalities, they should request the owner to consult his local veterinarian.

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Biological Products.—All possible influence should be exerted to control the promiscuous and unreported distribution of live viruses and organisms going into interstate commerce, and continued effort directed to make mandatory the report of all sales of tuberculin, mallein, Brucella antigen, live viruses, and live vaccines within the states to the respective state livestock sanitary official.

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Veterinary Service.—A sample survey made by the Committee revealed, among other things, that the average age of those replying was 42, that they had been in practice for fifteen years, and that the net income varied from 10 per cent to 80 per cent of the gross income, with the average being 41 per cent.

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History.—It shall be the duty of the Standing Committee on History to survey and outline the specific scope of the work to be done. Thereafter, the committee shall each year execute a portion of the work that has been approved and, from time to time, draw up additional plans and recommendations for their work.

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Registry of Veterinary Pathology.—The monograph entitled "Veterinary Necropsy Technique," sponsored by the Committee on Registry of Veterinary Pathology, is nearing completion. It is expected that printing will be completed during the summer of 1950. This text should be widely used by students, laboratory workers, and practicing veterinarians.

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Diseases of Zoological Park Animals.—Recommendations were made to the U. S. Public Health Service regarding importation, transportation, quarantine period, and quarantine facilities for psittacine birds by the Committee.

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Wild and Furbearing Animals.—A growing demand for qualified veterinary service in zoos has been noted. Another leading zoo has recently added a veterinarian to the staff and provided research facilities. Many of the smaller zoos are employing veterinarians on a contract basis. Students may find that knowledge gained in this field will prove profitable.

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Representative to the National Livestock Loss Prevention Board.—Dr. J. R. Pickard, formerly of East St. Louis, Ill., a veterinarian who has had experience in agricultural extension, education, and in practice, has been added to the full-time staff. It is hoped that his work and research will

increase the interest and coöperation of more veterinarians in the field of livestock loss prevention.

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Representative to the Division of Biology and Agriculture, National Research Council.—A committee to initiate a handbook of biologic data was established by the American Institute of Biological Science. The work on this is well underway. The AVMA representative among many others has submitted titles and other materials for this handbook.

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Food and Milk Hygiene.—Very few regulations, including the one under discussion (Revised Milk Ordinance, recommended by the U. S. Public Health Service), provide for a thorough, competent, physical examination of the milking cows. A competent physical examination made by a qualified veterinarian of each milking animal in a herd is essential to the production of wholesome milk for human consumption. The detection of abnormal milk with laboratory tests and proper inspection on the receiving platform are valuable aids, but they must not be construed as substitutes for physical examinations.

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Public Relations.—We have much to tell the public about research, about accomplishments, about scientific training which veterinarians receive, and about the veterinarian's part in human and animal health. A good start has been made—we have a sound program that is producing results. The good that has been accomplished is only a beginning toward the many full benefits to be derived in the years ahead.

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Practitioner Participation in Brucellosis Control.—After examining the information relative to the various state programs, the Committee understands the unfortunate confusion that has been brought about by the widely divergent control plans. These and other problems are the stumbling blocks ahead for greater practitioner—and let us not forget—farmer participation. We must and can solve these problems that lie ahead. Improvement is often slow and tedious. Pressure groups and politics must be dealt with. The wholesale employment of lay technicians is not the answer, but through the concentrated efforts of all—farmers, practitioners, state and federal sanitary officials—we will succeed.

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Therapeutic Agents and Appliances.—It is the duty of the Committee to protect the practicing veterinarian and the clients he serves. Its purpose is to act as an official and authoritative body devoted to the task of evaluating current therapeutic agents and advising the veterinarian regarding their use.

To accomplish this, members of the Committee are preparing a book "Approved Veterinary Therapeutic Agents" which will be comparable with "New and Non-Official Remedies," but adapted to the specific needs of veterinarians.

Disease Control or Perpetuation

"In observing the various attitudes and activities toward disease control, it is disturbing frequently to note the time and effort expended toward the perpetuation of practices and programs utterly antagonistic to the sound time-proven principle of disease prevention—that of disease elimination. This paradox applies particularly to past attempts at brucellosis control; and perhaps even more paradoxical, most veterinarians, as well as many laymen, undoubtedly have been instinctively, if not consciously, aware of it."—*In a letter from L. R. Davenport, D.V.M., Illinois.*

Typing Koch's Bacillus

Merely isolating *Mycobacterium tuberculosis* does not complete a diagnosis of tuberculosis. Determining which one of the two mammalian types the organism belongs to is important epidemiologically. Though the interchange between the bovine and human species is not a free-for-all one, its significance can no longer be challenged. Classical studies in Sweden, Holland, Denmark, and France in the last ten years have revealed that the bovine type is sometimes responsible for open, pulmonary tuberculosis in man and that such persons spread the infection to cows they care for and milk. Conversely, if the type of infection in man is human, the danger to cows is meager.

Individual medication of baby pigs is easy when the medicine is placed in a pressure oil can. It is then easy for the veterinarian or the swine owner to administer the proper amount of medicine quickly and easily—*A. W. Krause, D.V.M., Iowa.*

Blastomycosis, histoplasmosis, and coccidioidomycosis are on the list of diseases that may yield to new antibiotic drugs (polymyxin B, aureomycin, chloromycetin, and neomycin), the Society of American Bacteriologists was told at a recent meeting in Baltimore.—*Science Service.*

Half of the disease and parasite troubles are licked with pasture rotation; the balance of the problem rests with good veterinary service.—*Live Stock Sanitary Committee, Sioux City, Iowa.*

Coccidiosis in the Dog—Clinical Observations

H. L. McGEE, D.V.M.

Miami, Florida

THE FOLLOWING data are reported to spur the attention to, and bring about more consideration of, coccidiosis in the dog. This review is neither authoritative nor technical but a simple synopsis of an everyday, small animal practitioner's observations and findings. The writer is greatly interested in this particular subject and wholeheartedly welcomes discussion.

HISTORY

The reader is referred to Kelser's "Manual of Veterinary Bacteriology" (3rd ed.) for a complete history of coccidiosis. The chart will enable the practitioner to review hurriedly the life cycle of Eimeria. The genus Isospora differs very little in its life cycle, forming only two sporocysts, each of which contains four sporozoites.

In the following discussion, only *Isospora bigemina* and *Isospora rivolta* will be discussed, because these are the two types most commonly found in our practice. The *I. bigemina* is relatively small, measuring from 8 to 11 μ in diameter. Under the low-power objective of the microscope, it has the appearance of a colorless erythrocyte with no nucleus or stroma. In acute cases, reproduction usually occurs in the intestinal epithelium and immature oöcysts mature outside the body. In chronic cases, the oöcysts mature in the submucosa of the small intestine. This explains why *I. bigemina*, the so-called small type of Coccidium, is sometimes difficult to find, and several fecal examinations may be needed to reveal it. We believe this to be an important factor, especially in dogs presented for administration of prophylactic vaccine. If there is any suspicion or history of an occasional loose stool, several fecal examinations are made. If coccidial oöcysts are found in any of these examinations, no prophylactic vaccine is administered.

This type of coccidiosis is the most difficult to overcome, and we have noted that the animal is never completely negative. However, if symptomatic and specific treatment is given to hold secondary bacterial invaders at a minimum, the animal will eventually build up an immunity. We have satisfied ourselves by skillful examination that these recovered animals remain carriers. However, in a kennel of Boxers, careful management controlled infection.

In this kennel 4 bitches were found infected with *I. bigemina*. Treatment was begun and the animals apparently returned to normal; at least in so far as clinical examination could determine. However, subsequent fecal examinations at close intervals always revealed some oöcysts, but the animal showed no outward symptoms. Although strictest sanitation and prophylaxis were practiced in this kennel, all subsequent pups from the 4 bitches became infected with the same type at 2 to 6 weeks of age. These pups, in turn, were treated until immunity could be established.

The oöcysts of *I. rivolta*, or so-called large coccidia, measure from 18 to 24 μ in diameter. Maturity usually occurs outside the body, seldom within the intestinal submucosa. This type usually responds readily to our treatment, and the animal is back to normal shortly, both clinically and microscopically.

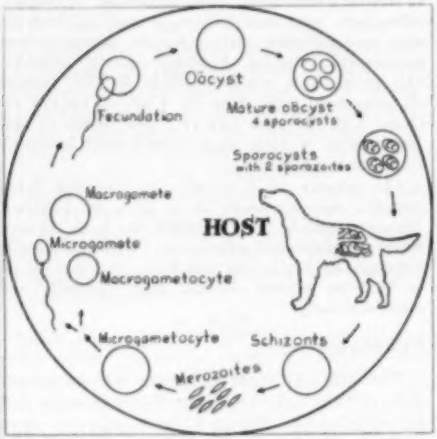
SYMPTOMS

The clinical manifestations are so inconsistent that only the most common ones will be mentioned. Those most frequently seen in patients presented at our hospital are a temperature between 102.5 and 103 F.; mucous or purulent discharge at the eyes; dry, sometimes sticky, nostrils; gagging or hacking cough; and bowel movements which range from loose to bloody or mucous. In the chronic cases there is a history of periodic diarrhea. The presence of Protozoa microscopically is diagnostic. Occasionally, a partial posterior paralysis is observed. The history and microscopic examination reveals the chronic type. Whether this particular symptom is an aftermath of coccidiosis or some other infectious disease remains open to question.

TREATMENT

Many treatments have been tried since the sulfonamide drugs were introduced and we have found sulfamethazine the most effective. However, the first step in treatment is correction of the diet. The animal is put on a diet of pablum in milk. We use canned milk diluted with an equal volume of water. This diet is continued during four days of sulfamethazine medication. The idea is to keep the intestinal tract as empty as possible during this treatment. A hard-boiled egg night and morning may be rec-

ommended but rarely will it be eaten. We prescribe a pure or refined form of calcium rather than bone meal. In fact, we find Upjohn's bone phosphate very satisfactory. We give 1 teaspoonful of the bone phosphate night and morning to a 20-lb. dog, and vary the dose for other dogs according to their size. The use of calcium is considered important, and we believe it is closely related to a quick and effective recovery. Therefore, the animal should be kept on the bone phosphate for several months after treatment has been completed.



— *Miami Veterinary Clinic*

Chart 1—Life cycle of Eimeria.

We use sulmet in massive doses, 1 gr. per pound of body weight twice daily for four days. This dosage can be doubled without ill effect, the large dosage twice a day has proved much more effective than smaller doses three or four times daily. When the sulfonamide treatment fails to decrease the number of oöcysts, we administer aureomycin — 50 mg. every six hours for 12 doses. Even this sometimes fails to eliminate the oöcysts completely, but it usually brings the animal back to a clinical or apparent normalcy.

We might add that infrequently *Isospora hominis* has been reported in young children. The treatment often used is diodoquin at 3 gr. per pound body weight daily. However, in the human being, the type mentioned is usually self-limiting. We have used diodoquin on dogs at our hospital with no appreciable improvement.

DISCUSSION

No disinfectant known to this observer will absolutely clean premises of coccidia. A blowtorch or flame thrower approaches this most closely.

When both coccidia and hookworms are present, it is always wise to give the four-day sulfonamide treatment before administering the anthelmintic. If the reverse order is used, the percentage of quick and satisfactory recoveries is always small.

The mode of transmission of coccidiosis remains doubtful. Our observations and histories have led us to question the possibility of wild birds being carriers. Pets might be exposed to droppings on lawns and elsewhere about the yard.

Sometimes a case of encephalitis or chorea develops, following a severe case of coccidiosis, with no previous clinical evidence of distemper or any other infectious disease. We doubt that these sequelae can be due to exotoxins of coccidia or to a virus associated with it. However, this theory has been suggested because occasionally an animal is presented with possible oncoming neurologic symptoms which are offset or overcome by treatment. This occurs rarely, but it does occur. For example, occasionally, an animal is brought to us with a heavy coccidial infection and slight weakness of the hind legs. When treated for coccidiosis, the incoördination and muscular weakness are corrected.

Our practice of administering no prophylactic vaccine to any animal found to show coccidia on fecal examination will be questioned by many and is open to discussion. However, our observations nearly always show that later neurologic symptoms develop if this factor is not kept in mind.

This malady is definitely on the increase throughout the South, and it is our hope that further observations will be published, so that a more effective program of control and a more satisfactory line of treatment may be developed.

Medical investigators have observed that sodium iodide virtually doubles the effectiveness of penicillin against syphilis, notwithstanding that the former drug is relatively ineffective alone against spirochetes.

Distribution of Newcastle Disease Virus in, and Elimination from, Intratracheally and Intramuscularly Inoculated Birds

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THE ADVENT of live virus Newcastle disease [avian pneumoencephalitis] vaccination raises the question of the role of the vaccinated flock as a source of infection in comparison with a naturally infected flock. Information on the length of time each might serve as a source of infection would be of value to scientific investigators and to poultrymen who purchase chicks or who hatch them in different lots.

EXPERIMENTAL

Inoculations.—To simulate the types of infection represented by a naturally infected and a vaccinated flock, birds were inoculated intratracheally and intramuscularly. Thus, on May 17, 16 chicks hatched at the college farm on April 22, 1948, were brought to the poultry building. Several were bled aseptically from the heart, and a neutralization test was made in eggs with the pooled serums. The results showed that only one, minimum, fatal embryo dose was neutralized; therefore, the chicks were considered susceptible to Newcastle disease (ND). On July 5, 8 of these chicks, now 10 weeks old, were inoculated with the vaccine strain of Newcastle disease virus (NDV). Four chicks received an intramuscular injection of 0.2 cc. of nondiluted amnioallantoic fluid of the fourth passage, harvested February 23. The remaining 4 chicks received an intratracheal injection of 0.2 cc. of the same fluid. These chicks were then placed in eight separate cages, and with each one was placed a susceptible chick of the same age.

The chicks were observed daily for ten days (tables 1 and 2). The symptoms in chicks inoculated intramuscularly were milder and of shorter duration than those in chicks inoculated intratracheally. Of the chicks in contact with others inoculated intramuscularly, only bird 705 showed any symptoms, whereas all 4 chicks in contact with intratracheally inoculated chicks exhibited hoarseness or other respiratory symptoms.

Results of Intramuscular Inoculations.—At the end of the ten-day period, all chicks were sacrificed. Those inoculated intramuscularly showed evidence of ND. In 3 cases, the air sacs were cloudy and in bird 720 mucus was found in the trachea. In contrast, the chicks in contact with this group exhibited no findings which would indicate the presence of ND.

Results of Intratracheal Inoculations.—In all cases, the chicks inoculated intratracheally and their contacts exhibited changes typical of ND. In every case, the air sacs showed some degree of clouding or contained flakes of exudate. Interestingly enough, the trachea of every inoculated bird was free of exudate whereas those of the contacts still contained some mucus.

Occurrence of Virus in Blood and Exudate.—At daily intervals over the ten-day period following inoculation, 1.0 cc. of blood was collected from the wing vein of each bird. Unfortunately, the blood sample collected from bird 706 on the fifth day was lost. An additional blood sample was collected from each of the contacts of the intratracheally inoculated birds and from 1 of the intratracheally inoculated birds on the eleventh day. The blood samples were mixed with 0.5 cc. of a 2 per cent solution of sodium citrate to prevent clotting. The samples were then stored at -20 C. until inoculation into eggs.

Each sample was inoculated intra-allantoically into 4, 10- or 11-day-old embryonating eggs in a dose of 0.2 cc. per egg. The eggs were incubated and candled daily during a seven-day period succeeding the inoculation, and those containing dead embryos were removed. The embryos that died on the first day after inoculation were discarded as nonspecific deaths. Where an excessive number of embryos died on the first day, the embryos were cultured, and in no instance was bacterial contamination found.

All dead embryos other than those which died on the first day after inoculation were examined. If all embryos died and on examination showed definite lesions of ND, the sample was diagnosed as positive. If all 4 embryos lived or failed to show definite lesions of ND, the livers from the dead embryos were collected aseptically and stored at -20 C. until reinoculation. These samples were then passed through successive generations until positive or negative results were obtained. If all 4 of the inoculated embryos from a sample lived for seven days after inoculation, they were discarded, and the sample used for inoculum was considered negative.

Samples of mucus were collected from the

Paper of the Journal Series, New Jersey Agricultural Experiment Station, Rutgers University (The State University of New Jersey), Department of Poultry Husbandry, New Brunswick. Mr. Miller was a guest assistant in this work.

tracheas of all birds at the time the blood samples were taken. The trachea of each bird was swabbed with sterile cotton and the mucus washed into 1.5 cc. of a sterile physiologic salt solution. These samples were frozen at -20 C. immediately after collection and held for inoculation. The samples were thawed as needed and, after being thoroughly mixed, were centrifuged at 2,000 r.p.m. Following centrifugation, 1.0 cc. of the supernatant fluid was pipetted off and treated with 0.2 cc. of a solution containing 10,000 units each of penicillin* and streptomycin*. Each treated sample was inoculated intra-allantoically into 4, 10- or 11-day-old embryonating eggs in a dose of 0.2 cc. per egg. In no instance did the penicillin and streptomycin fail to prevent bacteriologic contamination in the mucus samples.

Results of Intramuscular Inoculations.— Of the 80 blood samples tested, the virus was isolated from only one sample, a third day, postinoculation sample (718), as indicated in table 1.

Of the 8 chicks swabbed daily and tested, NDV was recovered only from the tracheas of the 4 inoculated chicks, but not from the mucus of any of the contacts. In 1 chick (730), the virus was recovered postinoculation on the third, fourth, and fifth days; in 2 cases (718 and 720), on the fifth and sixth days; and in the fourth case, only on the sixth day.

Results of Intratracheal Inoculations.—Virus was recovered from the blood of only 2 chicks: from inoculated bird 706, in which it was found only on the sixth day; and from contact bird 793, in which it was found only on the eighth day.

Virus was recovered from the tracheas of all the chicks inoculated intratracheally. Two chicks (710 and 722) yielded virus daily from the first through the fifth and sixth days, respectively; a third chick (714) on the third, fourth, and fifth days; and a fourth chick (706) on the second, fourth, and fifth days. The negative result recorded for the third day sample of this bird is based on inadequate evidence in that the 4 inoculated embryos all died within twenty-four hours and, lacking enough original inoculum, the livers of the dead embryos were pooled and inoculated, but failed to kill any embryo on subinoculation. The virus was recovered from the trachea of every contact chick on the first day after inoculation. In 2 chicks (725 and 733), the virus was not recovered again until the seventh day, but was recovered daily from the seventh to the tenth day after inoculation. The virus was recovered daily from a third chick (724) from the sixth to the eighth day, and from a fourth chick (731) on the fifth, sixth, seventh, and ninth days after inoculation. The negative result on the eighth day sample cannot be accounted for.

*E. R. Squibb and Sons, New York.

DISCUSSION

Attempts to recover NDV from 164 blood samples collected during the ten-day period

TABLE 1—Results of Examination of Blood and Mucus of Intramuscularly Inoculated Birds and Contacts, with Symptoms and Autopsy Findings

Bird	Sample	Results of sampling and observation on days in July											Autopsy findings	
		6	7	8	9	10	11	12	13	14	15	16	Traches	Air Sacs
730 INOC.	BLOOD	—	—	—	—	—	—	—	—	—	—			
	MUCUS	—	—	+	+	+	—	—	—	—	—		Clean	Slight Clouding
	SYMP.													
708 CONT.	BLOOD	—	—	—	—	—	—	—	—	—	—			
	MUCUS	—	—	—	—	—	—	—	—	—	—		Clean	Clean
	SYMP.													
739 INOC.	BLOOD	—	—	—	—	—	—	—	—	—	—			
	MUCUS	—	—	—	—	—	+	—	—	—	—		Clean	Slight Clouding
	SYMP.					H	H-MT							
738 CONT.	BLOOD	—	—	—	—	—	—	—	—	—	—			
	MUCUS	—	—	—	—	—	—	—	—	—	—		Clean	Clean
	SYMP.													
718 INOC.	BLOOD	—	—	+	—	—	—	—	—	—	—			
	MUCUS	—	—	—	—	+	+	—	—	—	—		Clean	Clouded
	SYMP.			H	H-MT	H	H	R-MT						
705 CONT.	BLOOD	—	—	—	—	—	—	—	—	—	—			
	MUCUS	—	—	—	—	—	—	—	—	—	—		Clean	Clean
	SYMP.					H	H							
720 INOC.	BLOOD	—	—	—	—	—	—	—	—	—	—			
	MUCUS	—	—	—	—	+	+	—	—	—	—		Some Mucus	Clean
	SYMP.													
735 CONT.	BLOOD	—	—	—	—	—	—	—	—	—	—			
	MUCUS	—	—	—	—	—	—	—	*	—	—		Clean	Clean
	SYMP.													

H = Hoarse; MT = Mucus trachea; R = Rattle; * = Only 1 egg inoculated.

succeeding inoculation resulted in positive findings in only three samples.

Doyle[1], Farinas[2], Rodier[3], Topacio[4], Hudson[5], Crawford[6], Acevedo[7], and Brandly[8] have recovered the virus from the blood. These reports, however, deal with exotic strains of virus which are admittedly more virulent than the strain used in this experiment.

Brandly *et al.*[9] considered the variables contributing to the serologic tests by their component parts which alone, or together, may produce an altered result. In the course of the work, they determined the antibody titer in chickens inoculated intratracheally to be positive at five to six days after inoculation and to reach a peak in twenty-two days. In chickens inoculated intravenously, a positive antibody titer was obtained one to three days after inoculation and reached a peak seven days after inoculation. An attenuated K and D New Jersey strain of NDV was used for these inoculations. The NDV was isolated from the washed blood cells of birds inoculated intratracheally on the second, third, fourth, and seventh days after inoculation.

From the results obtained by these workers, one might expect recovery of the virus from the blood in more cases than are recorded in this experiment. Conceivably, the still milder strain of virus used in this experiment might multiply so slowly that the concomitantly developing immunity prevented a concentration of virus in the blood sufficient to be detected by the method used. Nevertheless, it is interesting to note that, in the intramuscularly inoculated bird, the virus was recovered from the blood prior to its recovery from the trachea, whereas in the intratracheally inoculated birds the reverse is true.

Of the 4 intramuscularly inoculated birds, virus appeared in the tracheal mucus of each for one to three days, beginning not earlier than the third day after inoculation. Only 2 of these birds showed respiratory symptoms. In 1, these lasted only two days, beginning the day before the appearance of virus in the trachea. In the other, symptoms were observed from the third through the seventh day, virus appearing in the trachea on the fifth and sixth days. This was the only bird in the intramuscularly inoculated group in which virus appeared in the blood, and this on the third day only. Of the 4 contacts in this group, only 1 showed symptoms (fifth and sixth

TABLE 2—Results of Examination of the Blood and Mucus of Intratracheally Inoculated Birds and Contacts with Symptoms and Autopsy Findings

Bird	Sample	Results of sampling and observation on days in July											Autopsy findings	
		6	7	8	9	10	11	12	13	14	15	16	Trachea	Air Sacs
714 INOC.	BLOOD	—	—	—	—	—	—	—	—	—	—			
	MUCUS	—	—	+	+	+	—	—	—	—	—		Clean	Flakes of Exudate
	SYMP.			H	C-MT	L-MT	H	R						
725 CONT.	BLOOD	—	—	—	—	—	—	—	—	—	—	—		
	MUCUS	+	—	—	—	—	—	+	+	+	+		Mucus	One Sac Clouded
	SYMP.			SH	SH	H	SH	C-MT						
706 INOC.	BLOOD	—	—	—	—	O	+	—	—	—	—			
	MUCUS	—	+	—	+	+	—	—	—	—	—		Clean	Some Clouding
	SYMP.			SH	H	VH-MT	R	H						
724 CONT.	BLOOD	—	—	—	—	—	—	—	—	—	—	—		
	MUCUS	+	—	—	—	—	+	+	+	—	—		Some Mucus	Clouded[1]
	SYMP.				SH	SH	SH	H						
710 INOC.	BLOOD	—	—	—	—	—	—	—	—	—	—	—		
	MUCUS	+	+	+	+	+	—	—	—	—	—		Clean	Clouded
	SYMP.			H	H	SH	H-C	D						
731 CONT.	BLOOD	—	—	—	—	—	—	—	—	—	—	—		
	MUCUS	+	—	—	—	+	+	+	—	+	—		Mucus	Clouded
	SYMP.			H	H	H	SH	SH						
722 INOC.	BLOOD	—	—	—	—	—	—	—	—	—	—			
	MUCUS	+	+	+	+	+	+	—	—	—	—		Clean	Clouded
	SYMP.			H	H	H	H	H						
733 CONT.	BLOOD	—	—	—	—	—	—	—	+	—	—	—		
	MUCUS	+	—	—	—	—	—	+	+	+	+		Mucus	Clouded
	SYMP.			C-MT	H	H	H	H						

H = Hoarse; MT = Mucus trachea; R = Rattle; O = No exam.; C = Crackling; L = Labored breathing; SH = Slightly hoarse; VH = Very hoarse; D = Depressed; [1] = Blackhead.

days), and none yielded virus from blood or tracheal mucus.

In contrast, and as might be expected, virus was, in general, recovered earlier from the tracheal mucus of intratracheally inoculated birds, *i.e.*, from the first day on in 2 birds, and from the second and third days, respectively, in the other 2. By the sixth day, only 1 of the 4 birds was shedding virus in this group in contrast to 3 of the birds inoculated intramuscularly. Correspondingly, respiratory symptoms began, in each case, on the third day and extended through the seventh, in contrast to symptoms in only 2 of the 4 intramuscularly inoculated birds, which lasted two and five days respectively.

Virus recovery from tracheal mucus of birds in contact with intratracheally inoculated birds presented an interesting pattern. In every case, virus was recovered on the first swabbing (about 24 hours) and then on the seventh through the tenth days in 2 birds, on the sixth through the eighth in a third, and on the fifth through the ninth days (excepting the eighth) in the fourth bird. Correspondingly, the beginning and duration of respiratory symptoms were approximately the same as in the intratracheally inoculated birds, *i.e.*, from the third through the seventh days in 3 birds and from the fourth through the seventh in 1 bird. Virus was recovered from the blood of only 1 intratracheally inoculated and 1 contact bird, and in only one sample in each case. In contrast to the intramuscularly inoculated bird that showed virus in the blood before it appeared in the tracheal mucus, the intratracheally inoculated bird and the contact that yielded virus in the blood did so only after the virus had been recovered from the tracheal mucus.

The presence of mucus on autopsy in the trachea of every bird in contact with an intratracheally inoculated bird, and its absence in the inoculated bird, can be explained by the interval required for the transfer of infection to the contact.

From the limited data, it would appear that in the 4 intramuscularly inoculated birds, immunity developed so rapidly as to prevent a high concentration of virus in the trachea and, hence, there was no apparent spread to the contacts within the time allowed. On the other hand, virus introduced into the trachea was recoverable here in 2 birds from the first day through the fifth and sixth days, respectively, and from 2 birds from the second and third days respectively. It may be surmised that, in these latter 2 birds, the virus penetrated the respiratory epithelium sooner and did not reappear in quantities sufficient to be detected until multiplication and shedding took place, whereas the virus recovered on the first swabbing of the former 2 birds represented residual inoculum. By the same token, the virus in the tracheas of every contact bird at twenty-four hours may be interpreted as recently acquired virus that had not had time to penetrate the epithelium. By the second day, however, penetration was complete enough to prevent recovery by the method used. Then, after a lag, multiplication of the virus reached a point where it was shed in concentration sufficient to enable recovery by swabbing. Thus, to the extent to which the intramuscularly inoculated birds represent vaccinated birds, spread of infection to contacts is less likely than in the case where the donors are infected by way of the respiratory tract, even when the same strain is used. It is unfortunate that the importance of the concentration of virus in the tracheas of intramuscularly and intratracheally inoculated birds was not anticipated so that determinations on this point could have been included in the study.

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Club Practice in New Zealand

Veterinary clubs which are subject to local management and financing are fairly common in the intensive dairying district of the North Island of New Zealand. The organization which already exists for the supplying of milk or cream to the network of butter or cheese factories employs a wholetime practicing veterinarian to service the dairy farmers within its organization. Each farmer may pay either upon the amount of milk or butterfat he sends to his factory, or upon a per-head-of-milking-cow basis.

The New Zealand Veterinary Services Council subsidizes each of these club-practice veterinarians to the extent of 400 £ a year. The remainder of the income is from the livestock owners who receive service.

A few thriving veterinary associations also exist in the sheep-farming and some of the mixed-farming districts of both islands of New Zealand. Says H. Ewer, of the Institute of Animal Pathology, Cambridge (*The Veterinary Record*, Dec. 11, 1948): "The organization of this type of club practice may present the local farmers with a less straightforward problem, but our experience shows that it can certainly be solved in a satisfactory manner if the will is there."

Policy of New York Veterinary News

The Committee on Publications of the New York State Veterinary Medical Society met in Ithaca, Jan. 6, 1950, to discuss the policies to be followed by their monthly publication *Veterinary News*.

It was agreed that the name should be retained and that the bulletin should concern itself, for the most part, with veterinary news within New York State. It was also agreed that there should be no feature technical articles, but that papers containing well-documented material properly set up should appear in technical or professional journals with national or international distribution and become a part of veterinary literature. Papers of this kind are to be reviewed in *Veterinary News* not as abstracts or summaries but as digests.

The subject of publishing case reports was less unanimously agreed upon. The committee felt that only outstanding case reports should be published and, again, that such reports were entitled to presentation in journals of wider circulation.

The committee consists of Drs. C. R. Schroeder, chairman; J. M. Murphy, S. J. Roberts, R. H. Spaulding, and W. L. Weitz.

Things a Veterinarian Can Do for You

Under this title, Dr. E. J. Frick, Kansas State College, tells the readers of *Eastern Breeder* that the veterinarian can distinguish between mange, ring worm, or eczema by subjecting hair and skin scrapings to a microscopic examination. He tells about making a definite diagnosis of parasitism and the type of parasitism from microscopic fecal examination. Very briefly, he also suggests the value of examination of a blood sample both for agglutination test and for microscopic examination; the value of urine analysis to determine kidney ailments; and the use of cell preparations for examination to determine the presence of inclusion bodies which develop with the virus infection.

"All this and much more is knowledge your veterinarian can command to help you. Use and know what he can do to help you handle your livestock successfully as well as protect your health," is the concluding paragraph of the brief item.

Compatibility of Antibiotics.—Reports to the effect that certain infections resist the action of penicillin given alone, and succumb to its use combined with streptomycin, does not signify that antibiotic therapy can be compounded indiscriminately in clinical work. Laboratory tests have shown that there can be antagonistic as well as synergistic action among the antibiotics.

NUTRITION

Recommended Nutrient Allowances for Sheep

This report organizes the pertinent results of all the experimental work on the nutrition and feeding of sheep into a concise booklet for practical use. Maintenance, rate of growth, lactation, and wool production must all be considered in calculating nutrient allowances, and margins of safety must be allowed.

Fig. 1—Simple hyperplastic goiter in adult Angora goat due to deficiency of iodine.

Protein.—Protein is particularly important for pregnant and lactating ewes and for young, growing animals. Nonprotein forms of nitrogen such as urea, amides, and ammonium carbonate can be converted to protein by bacteria in the rumen, when such compounds comprise not more than 25 per cent of the nitrogen, in a ration containing a total of about 12 per cent protein.

The rate of wool growth may be increased as much as fivefold by high levels of protein feeding.

Total Digestible Nutrients.—The total energy value of the ration is most likely to be deficient, but when it is deficient it will be accompanied by other specific deficiencies.

In feeding lambs, the physical balance of the ration is almost as important as the energy content, and the most effective rations contain approximately equal amounts of concentrate and roughage.

Inadequate digestible nutrients will result in slow growth, emaciation, and possibly a diminished wool crop.

Lack of energy is particularly important in pregnant ewes. The birth weight of twin lambs from ewes fed on a low plane of nutrition during the last six weeks of gestation was about one-half that of ewes fed on a high level of nutrition. This is important because the smaller and weaker lambs are not able to take full advantage of the potential milk supply of the dams and, therefore, losses are much heavier. It has been shown that for each pound of milk the lamb consumes during the first four weeks of life, the live weight will increase by about ¼ lb.

Calcium and Phosphorus.—Sheep fed liberal amounts of protein supplement are sure to get adequate amounts of phosphorus. The exact ratio of calcium to phosphorus is less important than to have an adequate amount of each present.

Rations decidedly lacking in calcium or phosphorus, or both, result in subnormal development of bone. The phosphorus deficiency may be indicated by slow growth, high feed requirement, depraved appetite, unthrifty appearance, listlessness, low blood phosphorus, and a knock-kneed conformation.

Salt.—Salt needs may be computed on the basis of 1 lb. per month per ewe. Sheep deprived of salt chew wood, lick dirt, and otherwise manifest an unsatisfied appetite. They also consume less feed and use this feed less efficiently.

Condensed from Recommended Nutrient Allowances for Sheep (No. 3), Committee on Animal Nutrition, National Research Council, 2101 Constitution Ave., N. W., Washington 25, D. C. Price 50 cents. Pictures by Committee.

Iodine, Cobalt, Iron, and Copper.—Deficient areas for several of these minerals have been established and will be familiar to practitioners within those areas. Iodine deficiency is seldom seen in mature sheep, and the continuous feeding of rather large amounts of iodine above requirements may result in definite harm.

Cobalt deficiency is manifested by loss of appetite, lack of thrift, weakness, anemia, and a decrease in fertility and milk production. The deficiency may be corrected by adding to the ration 0.1 mg. of cobalt daily per ewe.

The iron requirements of sheep have not been determined.

Copper deficiency may exist as a primary condition or it may accompany cobalt and iron deficiencies. Symptoms of inadequate copper are generally seen in the young lambs which are weak and often die of starvation. These lambs lack muscular coördination and on microscopic examination show degeneration of the myelin nerves. This condition is called enzoötic ataxia. Copper deficiency can be corrected by adding 1 per cent of copper sulfate in salt. This will prevent the symptoms in the lambs.

Vitamin A and Carotene.—As a general rule, forages which have retained a green color are much better sources of carotene than those which have been weathered, rained on, and matured. One of the first symptoms of vitamin A deficiency is night blindness. This is followed by nervous disorders, incoördination, and spasms. Urinary calculi may occur in the advanced stages. Lambs from ewes maintained on a vitamin A deficient ration may be born weak or dead.

Vitamin D.—Under range conditions, sheep probably do not need added amounts of vitamin D. A deficiency of this vitamin is shown by enlargement of the joints, bowing of the legs in the immature animal, stiffness in the anterior or posterior quarters, and an irregular gait.

Vitamin B Complex.—Ewes on a normal ration are able to synthesize all of the vitamin B factors needed for adequate nutrition. Similarly, it has been shown that vitamin E is present in sufficient quantities for reproduction in all normal rations. However, under some conditions, there may be a deficiency of vitamin E (*alpha* tocopherol) which leads to the development of muscular dystrophy in the lambs.

Toxicity of Minerals in Excess.—Excessive amounts of certain minerals are toxic or injurious to sheep and goats. Among these is fluorine which may cause emaciation, weakness, and impairment of the use of the limbs, thickening of the joints, and development of exostoses of the long bones and jaws. The normal ivory color of the bones gradually changes to a chalky white, and there is an increase in the thickness. Appetite is impaired, and the teeth, particularly the incisors, become pitted and

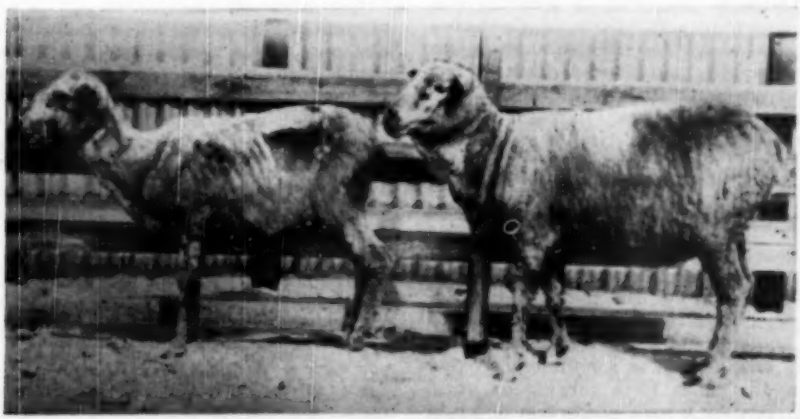

Fig. 2—The ewe on the left was pastured on a cobalt-deficient area. The ewe on the right received a supplement of cobalt and was pastured on same area.

eroded sometimes to such an extent that the nerves are exposed.

Selenium toxicity in sheep is shown by dullness, emaciation, soreness and sloughing of the hoofs, and stiffness of the joints. It has been shown that small amounts of arsenic are effective in counteracting the toxicity of selenium. This arsenic may be added to the drinking water at the rate of 5 parts per million.

Fig. 3—Lambs showing congenital deformities induced by prenatal feeding on seleniferous forage.

Molybdenum poisoning or scouring disease is seen in some parts of California and in England. The affected animals lose weight rapidly, sometimes within a few days after being turned on the affected pastures. The scouring in cows can be prevented by feeding 2 Gm. of copper sulfate daily.

Other Nutritional Disturbances.— Overeating disease, also called apoplexy, gastroenteritis, food intoxication, or infectious enterotoxemia, has been a serious factor in nursing and fattening lambs. The affected lambs throw back their heads, stagger, move in circles, or push against a fence and fall and die in convulsion. The disease may be held at a minimum by preventing the lambs from gorging on grain and by feeding a safe proportion of grain to roughage.

Pregnancy disease, ketonemia or acetonemia, is more common among ewes carrying twins or triplets than in those carrying single lambs. These ewes show a general sluggishness, loss of appetite, staggering gait, and nervousness. In the final stages, there is inability to stand or rise, and weakness, stiffness, or partial paralysis. When parturition occurs early in the course of the disease, recovery is much more likely. The condition has been produced experimentally on rations of poor quality or rations low in energy.

Stiff-lamb disease is characterized by whitish, calcareous intermuscular deposits. The lambs become stiff and have difficulty in walking and lag behind the band. The trouble can be minimized by feeding wheat germ meal and by administering *alpha* tocopherol or vitamin E.

Urinary calculi are suspected when animals strain to urinate and are restless. A deficiency of vitamin A and an imbalance of minerals is likely to underlie the formation of urinary calculi in lambs.

Palatability of Dog Food

The factors which determine palatability of dog food are: odor, wet or dry, temperature at which fed, consistency, container in which fed, age of food, regularity of feeding, eating habits of dogs, the fiber content, the protein-carbohydrate ratio, the fat content, and the environment of the dog at eating time.—*M. L. Morris, D.V.M., New Jersey.*

Crystalline vitamin B_{12} is required by baby pigs. This vitamin and a pernicious anemia liver extract, when injected to supply approximately equal amounts of vitamin B_{12} potency, produced equal responses in growth rate. This equality in growth response indicates that vitamin B_{12} is the growth factor supplied by the antipernicious anemia liver extract.—*J. Nutr., March, 1950: 403-414.*

Ascorbic acid (niacin) in 100-mg. doses daily is used in French factories to prevent heat exhaustion among men who work in excessively hot rooms.

Safe Milk Rare.—Except in Canada, Australia, and the United States, fresh, safe milk is a rarity.—*From Science Digest.*

EDITORIAL

The World Situation and the Veterinarian

What influence will the current Korean situation have on veterinarians, individually and collectively; and upon the American Veterinary Medical Association as a professional organization? Time alone can give the answer, but it is now appropriate to review the recent past, take stock of the present, and plan as well as we can to meet future developments with some degree of foresightedness. (*See* p. 249 of "News" Section.)

The basis upon which analysis and plans must be founded is this: The veterinarian is a public servant. This is particularly true of the practicing veterinarian, for the issuance of a license to practice is predicated upon the veterinarian rendering satisfactory service to the community and state, as well as to the individual owners of livestock.

Another factor to keep constantly in mind is: What is the military status of the veterinarian? This depends upon age, previous service in the armed forces, reserve status, size of family, and essential value to the community as a professional man.

The officers and executive board members of the AVMA, and the office staff in Chicago, are fully aware of the ramifications and complications of this problem. Extensive correspondence and active work in many related lines have provided the AVMA with a complete picture of the veterinary professional problems of World War II. We know the trials, tribulations, and frustrations of the individual members — those who served in the Army Veterinary Corps and those who remained in civilian work. We know the inequities which occurred, and we know the steps taken to correct them — some wholly successful, some partly successful, some unsuccessful.

We know also the problems of the draft boards and the demands made upon them by the military leaders whom they served. In most instances, the draft boards were strongly sympathetic to veterinarians rendering essential service in their communities. However, the decisions of the boards could not be based upon the best interests of the individuals concerned, and often not on what seemed to be most advantageous for a single community. National security dictated certain decisions.

The Veterinary Corps was faced with demands from the General Staff for veterinarians whose principal duty was to inspect the quality of foods of animal origin for the armed forces. The early military setbacks and losses, because there was "too little" and it arrived "too late," led to a natural desire that the Veterinary Corps should forestall similar criticism of its own efforts. Under the pressure of rapid expansion of military forces and their participation in many theaters of the global war, inequities, inefficiencies, and downright waste of veterinary personnel were bound to occur. They always are a part of war — but we know that the Veterinary Corps left a record which will compare favorably with that of any other branch of military service.

The lesson to be learned from the past is that planning and preparedness must be undertaken *now* to encourage a more efficient use of available veterinary personnel in whatever mobilization of national resources lies ahead. As this is being written, the AVMA has representatives attending conferences at the nation's capitol where professional manpower and defense problems are being discussed; also, discussions of the prospective over-all military and civilian needs for veterinary personnel and services have been arranged for the Miami Beach convention.

It is expected that from these conferences there will develop a careful analysis before a need for total mobilization is upon us, and that this analysis will lead to a distribution of veterinary manpower which will insure:

1) Adequate inspection service to all phases of the food procurement service — but without duplicating existing civilian inspection; and with adequate reserves of inspectors but no wasteful duplication of staffs.

2) The best distribution of civilian veterinarians for essential services to each community and to the country. This may mean a more generalized practice for many, with less specialization. It will mean greater participation in food and milk inspection for civilians, in animal disease prevention programs, and in public health projects — all of which may be less remunerative to the individual but more important to the community.

3) Careful explanation of the over-all problems to all groups of veterinarians — especially to those who register complaints. One gripe of every veterinarian who gave up a practice to serve in the Veterinary Corps concerns the group of veterinarians who were inducted as students into the Army Specialized Training Program in order that they might complete the professional curriculum, but who have had no active military service since graduation. At the time the ASTP groups finished college, the Veterinary Corps was not in a position to use these graduates on an active duty status. Naturally, they established practices — and, inevitably, some settled in communities where veterinarians had been called to active duty because of reserve commissions or enlistments in the Veterinary Corps, leaving practices which they had laboriously built up through the years. Here is an opportunity — *right now* — for all ASTP-deferred veterinarians to balance the books by volunteering for active duty in the Veterinary Corps Reserve.

Another sore point—the mechanism for bringing officers home after three, four, or five years of active service proved to be woefully slow in many instances. This situation has not been explained to the satisfaction of the officers involved, and it should not be repeated.

The situation is too complex for any one discussion. We bring the issues into the open and urge planning and action in advance, so that the record of the veterinary medical profession for the immediate years ahead may read: The veterinarians of the United States are servants of the community, and are distributed and utilized in such a way that they render maximum service—military and civilian—to the country.

Dates Set for First Pan-American Congress

The first Pan-American Veterinary Congress is tentatively scheduled for May 20-26, 1951, at Lima, Peru. Dr. José Santivanez, dean of the veterinary college of San Marcos University where the Congress will be held, recently visited the United States and made some preliminary plans. The dates selected for the Congress will coincide with the celebration of the four-hundredth anniversary of San Marcos University, the oldest university in the Western Hemisphere. Dr. Santivanez will act as organizing head. Assisting him as members of the central organizing committee will be Drs. B. D. Blood and K. V. L Kestevan, veterinarians for the Pan-American Sanitary Bureau and the Food Agriculture Organization of the United Nations, respectively.

AVMA President C. P. Zepp, Sr., requested to appoint a U. S. committee to the Pan-American Congress, named the following: Drs. W. A. Hagan, George H. Hart, Harry G. Geyer, J. A. McCallam, B. T. Simms, James H. Steele, and C. D. Van Houweling, secretary.

The major subjects for discussion will be animal disease control, the veterinary medical aspects of public health, and veterinary medical education.

Objective in Iowa.—"It has been the primary objective of your officers this past year to promote veterinary public relations and to work with other organizations interested in Iowa agriculture and livestock disease control." This statement appeared in the address of President J. D. Shoeman to the members of the Iowa association at its sixty-second annual meeting in Des Moines, Jan. 17-19, 1950.

One of the most valuable assets for the veterinarian and the physician is judgment. Observations through the years indicate that those who possess judgment and use it are always successful.—*W. B. Redman, D.V.M., Iowa.*

Ward Giltner, D.V.M., M.S., Dr. P.H.

1882 – 1950

One may be proud of having known Ward Giltner and thankful for having enjoyed, contemporaneously, the rich color of his long professional life. His name goes into the record as the builder of one of America's foremost colleges of veterinary

Dr. Ward Giltner

medicine from cellar to flagpole, and as an architect *par excellence* of the veterinary profession, during the difficult adolescence of our undertaking. Besides these gifts to posterity, Dr. Giltner, in passing from this life at the dawn of his senescence, leaves unforgettable memories of a delightful personality that will live on in the hearts of those who knew him. Capable executive, popular disciplinarian, skillful technician, teacher, scholar, scientist, investigator, all blended into one character with a rare sense of humor, are the personal attributes to signalize in the writing of his obituary.

Born at Ithaca, N.Y., April 5, 1882, he entered his home-town college, Cornell, in 1903 and was awarded the D.V.M. degree in the class of 1906. His master's degree was obtained at Alabama Polytechnic Institute in 1908, and his doctorate in public health was conferred in 1933 by the University of Michigan. He joined the Michigan State College staff in 1908 in the role of bacteriologist and was named dean of the Division (now School) of Veterinary Medicine in 1923, a position he held until retired from active duty with the rank of dean emeritus in 1948. One can perhaps best arrive at the scope of his influence in veterinary medicine by the prominence veterinarians at Michigan State have gained through his guidance—a crew of workers few states can match.

His faith in scientific societies as instruments of progress was outstanding. He joined the AVMA in 1907, served as its representative to the A.A.A.S. from 1925 to 1948, and was an associate editor of the JOURNAL (public health) from 1944 to 1947. He was a member of the Society of American Bacteriologists, the Association of American Pathologists, the U.S. Livestock Sanitary Association, and, of course, Michigan State Veterinary Medical Association. Dr. Giltner was equally active in local civic affairs, having served both as president and as secretary of the East Lansing Board of Education and was a leading figure in banking, and building and loan association circles.

Ward Giltner died of a heart attack July 14, 1950, at his summer home at Higgins Lake, Mich. He is survived by his widow, Mrs. Mabel A. Giltner, née Decker, whom he married in 1902, two sons, two daughters, and his well-known brother, L. T. Giltner, of the U.S. Bureau of Animal Industry, Washington, D.C.

Fifty Years Ago.—The first item in *USDA Employee News Bulletin* for Dec. 19, 1949, is a discussion of the USDA as it was constituted fifty years ago, that is, in 1899. This short review shows the growth in activities and in divisions of the Department during the half century.

Safeguarding the Profession.—Every physician should aid in safeguarding the profession against admission to it of those who are deficient in moral character or education.—*From the Principles of Medical Ethics, American Medical Association.*

CURRENT LITERATURE

ABSTRACTS

Virus Pneumoenteritis in Calves

A virus, isolated by filtration was pathogenic for 75 per cent of inoculated mice even when diluted 1:1,000. Only calves and mice could be infected with the virus, and the mice were susceptible only when the virus was instilled intranasally.

In calves, the anatomic lesions were pneumonic foci, followed by bilateral diffuse lung lesions.

To date, eggs have not proved suitable for virus production.—[*P. Gallo and Rodil Calderon: The Virus of Pneumo-Enteritis in Calves. Rev. Grancolomb. Zoötec., Hig. Med., Vet., 2, (1948): 493-501.*]

Paralytic Rabies

This disease was diagnosed in Venezuela for the first time 1948. Cattle and goats are very susceptible, but pigs and dogs are highly resistant.

Virus can be isolated from the saliva of sick calves, and when injected into experimental animals, the incubation period varies from eight to thirty-nine days, depending on the route of inoculation.

A vaccine has been produced by using a local fixed virus. The brains and cords of infected animals are mixed with an equal volume of physiologic saline solution to which 2 per cent phenol has been added. The mixture is incubated and then diluted to contain 15 per cent nerve tissue. Held under refrigeration, this emulsion retains its antigenic properties for six months if protected from the light as well as kept cold.

This vaccine has been used under field conditions and it appears to control the disease effectively.—[*Richard Novicky: A Study of Bovine Paralytic Rabies in Venezuela. Rev. Grancolomb. Zoötec., Hig. Med. Vet., 1, (1947): 5-70.*]

Brucellosis Treatment with Aureomycin

Although aureomycin and sulfadiazine given simultaneously by the subcutaneous and oral routes, respectively, did reduce spleen size in experimental guinea pigs, it may not follow that such a combination would be effective in treating brucellosis in cattle or swine. Extrapolation of results from guinea pigs to cattle or swine may be just as hazardous as extrapolation of data from *in vitro* to *in vivo* conditions. The effect of aureomycin-sulfadiazine appears to be less marked than that of streptomycin and sulfadiazine. In addition, aureomycin in this combination produced toxic effects in guinea pigs which were more marked than when aureomycin alone was used.—[*L. W. Holm and W. G. Moore: Studies on the Efficacy of Aureomycin and Aureomycin-Sulfadiazine in Experimental Brucellosis in Guinea Pigs. Am. J. Vet. Res.*, 11, (*April*, 1950): 211-213.]

Incubation Periods in Brucellosis

Five heifers were infected by introducing material into the prepuce of the bull immediately before copulation, and 19 heifers were infected orally or by way of the conjunctiva at different stages of pregnancy. The incubation period of bovine brucellosis, the corresponding antibody formation in relation to the exact time of infection, is extremely variable. The length of incubation period is inversely proportional to the stage of the development of the fetus at the time of infection—the younger the fetus, the longer the incubation period. The longest incubation period recorded is 251 days. This explains why, in practice, few Brucella abortions are found before the fifth or sixth month of pregnancy. A period of months (up to 6) sometimes elapses following infection before antibody formation becomes evident. This applies especially to moderate infections at the time of service.

In some cases, antibodies can not be demonstrated until abortion has taken place. This has been known, but probably it has not been realized that such infection may have persisted for months, perhaps even from the time of service as is suggested by the present findings. On the basis of these experiments, it seems justifiable to claim that the value of one serologic test is limited. The results may even be misleading when a single examination is carried out—and especially in animals infected at service or those with an obscure history.—[*Axel Thomsen: Experimental Studies on the Incubation Period of Infectious Abortion in Cattle. Vet. J.*, 106, (1950):41-54.]

Leptospirosis in Israel

Until 1949, there were not more than 20 human cases of leptospirosis per year in Israel. Most of these were shown to be caused by *Leptospira bovis*, a few by *Leptospira canicola* and *Leptospira pomona* in people who worked with dogs and pigs. In 1949, the number of reported cases jumped to 300, and there were probably many more. No epidemiologic connection between this large num-

ber of human cases and domestic animals was established.—[*F. Jacusiel: Problem of Leptospirosis in Israel. Refuah Vet., 6, Dec., 1949.*]—M. Erdheim.

Histamine-Sympathin Balance

In the presence of histamine, sympathin behaves in a way very similar to that of epinephrine. A crude extract of the spleen, heart, and liver of calves contains sympathin and also organic substances of a cholinic type. When injected into experimental animals, it decreases the arterial pressure and has a depressor effect which can be eliminated by purification.

In 8 tests on dogs, it was observed that with the increase in arterial pressure, there was a parallel increase in the quantity of histamine. Tests showed that sympathin exerted an antihistaminic and antiacetyl-cholinic effect and when used by inhalation it prevented histaminic shock in guinea pigs.—[*Francisco J. Farreras-Co: Histamine-Sympathin Balance. Ann. Allergy, 7,* (1949): 46-64.]

Diseases of Chinchillas

The meager information on diseases of chinchillas makes this subject a new and intriguing field, says the author. He suggests that veterinarians must use their store of knowledge about other lower animals, particularly rabbits and guinea pigs, in order to serve the chinchilla industry. A knowledge of the habits, care, and feeding of these animals is important to proper diagnosis. —[*E. L. Stubbs: Diseases of Chinchillas. Vet. Ext. Quart. of the Univ. of Pennsylvania, 117, 1950.*]

The Matter of Colostral Immunity

Though much has been told in the past about the transmission of antibodies to the newborn by colostrum, this does not signify that there is nothing new to be discovered on that frontier. The subject was first studied systematically in 1912 as to the relative content of antibodies of mother's blood and her colostrum. It was then, and later, confirmed that in the case of diphtheria and tetanus organisms there was a veritable accumulation of antibodies in the mammary gland; also, that sometimes the usual phenomenon does not occur, and that the accumulation occurs a long time before parturition—in mares as long as six months before. It was also shown that the percentage of colostral antibodies drops sharply (as much as 80%) after parturition. Though obviously under hormonal control, it is not known why the colostrum and serum titers vary in their relations to each other at specified moments. The colostral period can be shortened by frequent milking; and the antitoxin titer levels off until it is about equal to that of the mother's blood serum. These facts can be of more than theoretic importance. It is known, for example, that the concentration of "antimulet" antibodies in the colostrum of mule-bearing mothers is prophylactic when effectively diluted by frequent milking before parturition or as soon as possible after. The effect of immediate postpartum, hourly milking rapidly lowers the mammary secretion of antibody. The drop is due, not to the removal of a certain quantity of antibodies, but to the dilution of its abundant antibodies by the more abundant milk secretion stimulated by milking.—[*E. Lemetayer: On the Subject of Colostral Immunity (title trans.). Bull. Acad. Vét. France, 23, (Jan. 1950): 43-45.*]

Canine Distemper and Human Influenza

Distemper is a specific disease of dogs exhibiting, in nature, no etiologic or immunologic relations to influenza of man.

The blood of dogs hyperimmunized against distemper does not neutralize the virus of influenza.

On inoculation of the virus of influenza into the respiratory organs or the blood stream, dogs react with a marked production of antibodies and may, therefore, be successfully used for the production of immune serum against that disease.—[*Hoffman, Dreguss: On the Alleged Relation Between Canine Distemper and Human Influenza. Antibody Response of Dogs Immunized with Influenza A Virus. Magyar allator. Lap.,* 4, 1947.]—F. KRAL.

Swine Erysipelas Aggressins

Broth cultures of *Erysipelothrix rhusiopathiae* a few weeks old contain aggressins which can be isolated by filtration. These aggressins possess the ability to produce a high degree of resistance against swine erysipelas in mice following subcutaneous injection.

The method of production and the reaction within the body are discussed in the article.—[*F. W. K. DeMoulin: Over Vlekziekte-Aggressinen. Tijdschr. Diergeneesk,* 73, (1948):1-10.]

Sulfonamide Therapy

The use of sulfonamides in the treatment of diseases of different species of domestic animals has been reported so successfully in most cases that it is interesting to point out a case in a soliped of intolerance to the drug as verified by the author.

An English pursang, 14 years old, was presented with symptoms of listlessness, inappetence, coughing, fever 103 to 103.5 F., conjunctival and oral mucosae slightly congested, pain on palpation of throat with tumefaction of local lymph glands and pronounced dyspnea. Nothing was observed in the bronchopulmonary system, but the pulse was rapid and tachycardiac. Everything else seemed normal.

After diagnosing the case as acute pharyngitis, sulfanilamide *per os* was prescribed as the only

internal medication. Fractionated doses totaled approximately 10 Gm., but treatment was interrupted next morning in view of the new symptoms present: anxiety, nervous disturbances, spasmodic contractions, profuse sweating and salivation, lowering of temperature to 100.2 F., alarming nausea with vomition seemingly imminent.

Upon discontinuation of the sulfanilamide, the dyspnea continued, the pulse became brachycardiac, and the heart sounds were muffled in spite of medication. Temperature oscillated between 102 and 101 F. This critical stage was followed by renal and gastrointestinal alterations which persisted for about two more days when slow recovery was noticed.

Further investigation revealed this same animal was treated for pneumonia with sulfonamides about a year before and suffered grave disturbances which confirmed the intolerance to sulfonamides already described.—[*A. Nuñes Salvador: Notations on the Study of Sulfonamide Therapy. Rev. Med. Vet., Soc. Portuguesa Med. Vet., (Portugal)* 43, (1948): 47-48.]—O. A. LOPEZ-PACHECO.

Test for Pregnancy

Among the different tests for the diagnosis of pregnancy in women, the injection of urine from the patient into the ventral sac of toads and frogs has been extensively used in Spain. This causes the laying of eggs in the female, and a discharge of spermatozoa in the male. This is known as the Gally Mainini test and is based upon the gonadotropic hormones, as is Friedmann's reaction.

The author applied this test to mares, using blood serum instead of urine. The serum was obtained by decantation from mare's blood collected by jugular venipuncture. Twenty mares, supposedly between fifty to one hundred days pregnant, were selected. During this period, the presence of gonadotropic hormones is detectable in the blood of mares. The serum was injected into 30 male frogs weighing 15 to 30 Gm., the dose varying from 1.5 to 3.0 cc. according to size of frog.

Collection of the urine at the frog's cloaca three hours after injection demonstrated the constant presence of spermatozoa in positive cases. The observation of the reactions was done with the aid of a trichinoscope, examining a drop of urine on a slide with light from below.

Of the 20 tests, 12 were positive—motile spermatozoa being observed except in 1 case in which the serum injected was decomposed. In that instance, the spermatozoa lacked motility. The results were exactly corroborated using Friedmann's test on female rabbits.

The use of male frogs weighing over 15 Gm. is recommended. The site of injection is the ventral sac, under the lumbar region. Three hours is ample time to obtain results. The collection of urine from the frog is done by introducing a dropper or pipette tip into the cloaca and, without suction but by capillarity or difference in pressure, obtaining a drop or two of urine. Contamination of the urine with fecal matter should be avoided, and a certain degree of skill must be developed in this operation. Sometimes, it is completely impossible to obtain a single drop of urine and the use of 2 frogs to test each sample of serum is recommended to save time. The presence of spermatozoa in the urine of frogs, even if they are not motile, is a positive indication of pregnancy.

This is a new test that can be used early, is simple and rapid, and very easily read.—[*Jose Hervas Pujol: Gally Mainini Pregnancy Test Applied to the Mare. Veterinaria (Spain), 13, (Oct., 1949): 791-796.*]—O. A. Lopez-Pacheco.

Susceptibility of Pups to Leptospirosis

Pups, 2 to 3 weeks old, were found to be uniformly susceptible laboratory animals for the study of bovine leptospirosis and for vaccine and serum control. Guinea pigs, rabbits, white mice, and rats were not satisfactory because of variable resistance. Calves, 2 to 6 months old, often reacted with only a slight rise in temperature to inoculations of Leptospira, or gave no reaction at all. Resistance increased in pups after three weeks, and after 6 weeks of age they were no longer suitable test animals.

All pups tested before inoculation with the agglutination-lysis reaction were negative. The calf experiments had shown that a negative reaction did not guarantee successful artificial infection.

The lethal intraperitoneal dose was 5 cc. of a 6- to 7-day-old subculture showing good motility and 15 to 100 Leptospira per field. Death usually occurred in five to eight days, rarely eleven to twelve days. Characteristic symptoms were weakness and hemorrhagic diarrhea, which often resulted in prolapse of the rectum and intussusception of the colon. Autopsy showed icterus and hemorrhages. Leptospira were recovered from heart blood, liver, spleen, and kidney.—[*I. A. Dukalov, V. G. Romanyenko, and M. F. Skabish, Novocherkassk, U.S.S.R.: Young Pups as Laboratory Animals for the Study of Leptospirosis. Veterinariya, 27, (Jan., 1950):55-58.*]—R.E.H.

Epidemiology of Newcastle Disease

There are indications that Newcastle disease virus is closely related, biologically, to other viruses such as those of influenza, mumps, poliomyelitis, lymphocytic choreomeningitis, and infectious mononucleosis. Evidence of biologic relationship is shown clinically, epidemiologically, pathologically, and serologically.

The author presents a complete discussion of the epidemiology of this disease, together with a listing of the human cases recorded.—[*Bejamin D. Blood: Epidemiology of Newcastle Disease. Bulletin of the Pan-American Sanitary Bureau, 29, (Jan., 1950): 28-48.*]

BOOKS AND REPORTS

Radioactive Isotopes

An authentic, popular presentation of the tagged atoms and the manner in which they are produced and used. Nuclear chemistry is reduced to a minimum, but the diagram showing how radioactive sodium is produced carries a meaning to the beginner in this field. Equations used are less readily absorbed, but easily by-passed. Half-life values varying from 14.8 hours to 5,100 years indicate the range and flexibilities of the field. Methods of detection, measurement, and protection are mentioned without attempt to explain the mechanism or the details of use.

To the veterinarian, the interesting section deals with the use of the radioactive isotopes as tracers and in therapy. As tracers, the tagged or labelled atoms help to clarify many of the physiologic processes of plant and animal life. This has been the greatest field of use, and probably will remain so for some time to come. As therapeutic agents, much less is known of them, and their uses in practical therapy loom only in the distant future. Experimental results are being reported and analyzed, but hope for early use is not strong.—[*Radioactive Isotopes in Biology and Medicine. By Edith H. Quimby. Paper. 18 pages. Ansco, Binghamton, N. Y.*]

Pharmaceutical Survey

The fact that pharmacy is customarily practiced as a part of a retail business establishment has brought about certain conflicts between scientific requirements, professional ethics, and the desire — in fact, the need — to make a profit. The report begins by pointing out that this factor appears to be responsible for the fact that pharmacy is not always treated as a profession.

This is something to ponder in the growing trend among veterinarians for the establishment of dispensing counters and stores. If the client is likely to think of the dispensing veterinarian as a retail merchant rather than as a professional practitioner, then veterinary medicine will surely lose some of its prestige as a profession.

For three years, 1946 to 1949, original data were gathered and integrated with relevant material from all available and many inaccessible sources. As a result, this volume presents more facts about pharmacy than have ever been available before. These facts are set forth in ten chapters covering the educational system and its curriculum, licensure, a review of the history of the profession and its present position, and the projects of retail pharmacy. The concluding chapter then analyzes these several fields of activity, makes some specific recommendations in each of them, and formulates programs of action for advancement.

An interesting, factual analysis which should be read by veterinarians charged with educating students for veterinary medicine or any of the health professions.—[*The General Report of the Pharmaceutical Survey, 1946-49. E. C. Elliott, Director. Cloth. 214 pages 7½ in. by 10½ in. American Council on Education, 744 Jackson Place N. W., Washington 6, D. C. 1950. Price $6.00.*]

Nutritional Deficiencies in Livestock

Proceeding on the thesis that correcting dietary deficiencies in livestock rations will do much to increase the world's supply of meat, milk, and eggs, the Food and Agriculture Organization of the United Nations has prepared this booklet.

The early chapters deal with the importance of feeding balanced rations to farm animals; the relationship between soils, crops, and animal nutrition; the toxicity of excessive amounts of some feed constituents; and the wastage and animal losses from feeding improperly balanced rations. The later chapters are based on the nutritional deficiency portions of the series of "Recommended Nutrient Allowances for Domestic Animals" of the Committee on Animal Nutrition of the National Research Council.

A concise and authoritative review of this subject in a form and of a size which will undoubtedly be used frequently by any veterinarian in general or large animal practice, and which will quickly and repeatedly repay the nominal cost of the book. —[*Nutritional Deficiencies in Livestock. By R. T. Allman and T. S. Hamilton. Paper. 102 pages, 6 in. by 9 in. FAO Document Sales Service, 1201 Connecticut Ave. N. W., Washington 6, D. C. 1949. Price $1.00.*]

How to Avoid Financial Tangles

This is a detailed, but concise, discussion of many common legal transactions, with particular emphasis on the steps which should be taken to reduce litigation and insure maximum transfer of property under a variety of legal situations.

Elementary property problems may deal with the types of property, the transfer thereof, the rights of minors, single adults, married persons, and the effects of divorce. The advantages of joint ownership are presented, the purpose of making investments, and the kind that may be made, selecting the correct type of insurance—life, automobile, fire, etc.—for individual needs, the several kinds of taxes to which income and property are subject, and the more common kinds of contracts and legal documents are described. While details form a part of each chapter, so also do examples.

The veterinarian owns property of many kinds, and this book will help to clarify the interrelationship of each with the other, and it will point to steps which should be taken before an accident or disaster strikes, in order that the final results may be up to expectations.—[*How to Avoid Financial Tangles. 21st ed. By K. C. Masteller. Paper.*

144 pages, 6 in. by 9 in. American Institute for Economic Research, Great Barrington, Mass. 1950. Price $1.00.]

Cross Country Horses

The book is based on the thesis that although a few people are naturally good riders, everyone can acquire good form and technique. For some it involves a moderate effort, for others it may require extreme concentration and will power to overcome faults and fears. For all, however, it involves a realization that horsemanship is the timely, tactful application of the natural human aids—the hands, the legs, the weight, and the voice. Without judicious use of these aids no rider becomes an expert.

Veterinarians will profit from reading the book. It was written by one who has been an instructor for many years because she possesses that rare gift of riding well and also the ability to tell and show others how the natural aids can be used to the greatest advantage. These the veterinarian can pass on to his clients, so that they will derive more pleasure from riding, while reducing the ailments caused from placing undue strain on the horse as a result of improper or inadequate use of the natural aids.

No discussion of disease, ailments, or treatments has been included.—[*Cross Country Horses. By Margaret M. Martelly. Paper. 121 pages. 5½ in. by 8 in. Finch and McCullough, 80-84 So. LaSalle St., Aurora, Ill. 1949. Price $3.50.*]

Medicine Could Be Verse

Written by a physician, this is a collection of poems which reach down into the essential backgrounds of human patients and the physicians and nurses who minister to them. Barbs are launched at physicians as well as patients, and even at dentists. The very first poem will whet the interest of every veterinarian not only because its title is "My Pegasus," but because of its gloom-dispelling qualities. For instance, the second stanza reads:

"With sunken flanks and withers lean and flat
And ringbones on his both forefeet,
With spavins, curbs and splints, and this and that,
Small wonder he is not so fleet."

The author has been a frequent contributor to the columns of the *Journal of the American Medical Association*, and he is known as the unofficial poet laureate of the Illinois State Medical Society.

The wide range of interest and curiosities covered by the poems will make this an enjoyable volume for every person who has been asked to "stick out the tongue and say ah", but more especially to those who must see people when they least desire to be seen—when they are ill, or when they have ailing animals. Most of the poems are in a gay mood, but a number of them reach down to good-natured satire.

A book to help the veterinarian laugh, when the usual means fail to break the tension.—[*Medicine Could be Verse. By C. G. Farnum, M.D. Cloth. 126 pages 5½ by 8½ in. The Exposition Press, 251 Fourth Ave., New York 10, N. Y. 1949. Price $3.00.*]

The Horseman's Companion

The author understands horses and endeavors to pass along her knowledge to beginners, for whom this book was written. Twelve chapters take the reader on a horseman's holiday that starts with purchase of the animal, due attention being paid to pitfalls in buying at auctions or from horse dealers. Advice is given on physical qualities and temperaments, grooming and husbandry, teaching children to ride, and techniques of trail riding, jumping, and hunting. One chapter is devoted to the show ring, with special mention of the children's class.

In neglecting to advise amateur buyers about the desirability of having a veterinarian examine prospective purchases for soundness, the author passed up a chance to augment the good advice this book contains. In fact, it is regrettable that such an experienced horsewoman as Mrs. Self would advise a tyro to invest as much as $100 to $1,000 or more without a veterinarian's assistance. —[*The Horseman's Companion. By Margaret Cabell Self. Cloth. 212 pages. Illustrated. A. S. Barnes and Company, 101 Fifth Ave., New York 3, N. Y. 1949. Price $3.00.*]

Main Street

This little booklet tells that more than 400,000 casualties, including 10,000 deaths, in 1949 were the direct result of speeding. One-third of these deaths occurred because someone was driving too fast.—[*Main Street. The book of street and highway accidents data, 1950. The Travelers Insurance Companies, Hartford, Conn.*]

Pennsylvania Proceedings

The Proceedings of the sixty-seventh annual convention of the Pennsylvania State Veterinary Medical Association contain the full record of this meeting, held at Bedford, Oct. 5-7, 1949.

All actions of the Association are recorded, along with the discussions incident thereto. Reports of the several committees are published, as are the complete papers of all program participants.

The book is carefully edited, but reflects the results of transcribing a secretarial record of an oral delivery. Seen in cold black and white, without the magnetism of the speaker's personality, the sentence structure leaves much to be desired. A paper which is delivered extemporaneously, or from notes, should not be published as a manuscript. On the other hand, a paper written for publication should not be "read" by the speaker.

He should make notes, and speak from them, but give the formal paper to the secretary for the record.—*[Pennsylvania State Veterinary Medical Association, Proceedings of the Sixty-Seventh Annual Convention. Paper. 140 pages. College Offset Press, 148 N. Sixth St., Philadelphia 6, Pa.]*

Custom Sheep Shearing

An expert sheep-shearer with a record of having sheared 5,254 sheep in twenty-five consecutive days (311 sheep per day) writes a book on this unique occupation that ought to be a valuable addition to the agricultural college library. It describes the technique and the new equipment employed. A book for teachers and beginners.—*(Custom Sheep Shearing. By E. S. Bartlett, world champion shearing expert. Illustrated. 128 pages. Sunbeam Corporation, Chicago. Price $2.00.)*

Science Service in Canada

Some highlights of the year's work in animal pathology are:

The concurrent use of spreading factors and killed *Brucella abortus* has not proved a successful means of producing immunity to brucellosis;

The parasite which acts as an intermediate host for the spread of enterohepatitis of turkeys is present in both eastern and western Canada;

Newcastle disease has been demonstrated in Canada and a vaccine is being produced which gives considerable protection;

In bacteriology and dairy research, it is reported that the widespread use of penicillin for the treatment of mastitis affects the results of the methylene blue test for milk quality and also interferes with normal acid development in the manufacture of cheddar cheese;

Sodium sulfathiazole, when fed to colonies of bees at the rate of 0.5 Gm. per gallon of sugar syrup, effectively prevented infections of *Bacillus larvae* and resulted in the cleaning up of American foulbrood.

In the chemical division, it was demonstrated by the use of radioactive calcium that the role of vitamin D lies in preventing the solution of calcium from the bone and only indirectly in increasing the absorption from the intestinal tract. The chemical determination of thyroxine iodine in iodinated proteins can not be used as an index of biological activity.

Entomologists found that the use of chlordan and toxaphene as a spray, or as the poison in poison bait, were more effective in grasshopper control than the arsenicals and fluosilicates.—*[From the Report of the Science Service, Canada Department of Agriculture, for the year ended March 31, 1949. The Right Hon. James G. Gardiner, Minister of Agriculture, Ottawa, Canada. Paper. 112 pages. 1949.]*

Cortisone

This pamphlet tells the story of cortisone from the time when it was simply an idea in the mind of Dr. Philip S. Hench, of the Mayo Clinic, until today when in response to the challenge of synthesis, physicians and research chemists have cooperated to carry the material from the test tube to the factory and to provide for human beings one of the richest rewards of research, namely, health and longer life.

Carrying the research on cortisone into the field and demonstrating the value of this product in the treatment of rheumatoid arthritis presents a story in which every veterinarian will be deeply interested.—*[A Progress Report on Cortisone. Paper. 28 pages. Illustrated. Merck & Co., Rahway, N. J. 1950.]*

Received But Not Reviewed

The Organization and Operation of Artificial Breeding Associations. Revised 1948. American Dairy Science Association, Ithaca, N. Y. 22 pp.

Dairy Breeding Coöperatives, their Development, Practices, and Policies. Circular C-133, January, 1949. Director of Information and Extension, Farm Credit Administration, Washington 25, D. C. 29 pp.

Adult and Calfhood Vaccination for Control of Brucellosis. Bulletin 741. New Jersey Agricultural Experiment Station, New Brunswick, N. J. 19 pp.

Annual Report of the Department of Veterinary Science and Animal Husbandry, 1946. Tanganyika Territory, Africa. 17 pp.

Listerella monocytogenes Strain Isolated from a Human Source in Puerto Rico. By Oscar Felsenfeld. Reprint from the Puerto Rico Journal of Public Health and Tropical Medicine, Vol. 24, No. 1, Sept. 1948. 4 pp.

DDT Poisoning—A New Syndrome With Neuropsychiatric Manifestations. By M. S. Biskind, M.D., and Irving Bieber, M.D. Reprinted from *American Journal of Psychotherapy*, 3, (1949): 261-270. 10 pp.

REVIEWS OF VETERINARY MEDICAL FILMS

Lungworm Disease in Cattle.—Silent, 16 mm., color; running time about ten minutes. Produced by and available from the Regional Animal Disease Laboratory of the BAI, Auburn, Ala.

The lungworm, *Dictyocaulous viviparous*, is shown in a Petri dish of saline solution and also as it occurs in the lung of the infected animal. These latter views show the pneumonia caused by the worm. Photomicrographs are also shown. Calves infected with the cattle lungworm reveal

the symptoms as they are likely to be seen by the veterinarian in the field. Control measures are outlined in order to complete the picture. Since there is no effective treatment for lungworm, none is mentioned.

Considered as a unit, the picture is interesting to veterinarians but probably is rather technical for lay groups. Some sections of it would be readily understood by breeders and cattle owners, but other sections are too technical for them to follow as management procedures. The titling is excellent and carries the professionally trained veterinarian through the stages of the disease in logical sequence and at the normal rate.

Striking Back Against Rabies.—Sound, 16 mm., black and white; running time approximately twelve minutes. Produced by the Communicable Disease Center of the U. S. Public Health Service; available from the AVMA Motion Picture Library, 600 S. Michigan Ave., Chicago 5, Ill. Rental, $2.00.

This is the story of how Middletown controlled a serious epizoötic of rabies in their dogs. Beginning with newspaper headlines and radio commentary on the occurrence of rabies, the major portion of the picture is devoted to the procedures of the community to get the disease under control. A quarantine order is put into effect, vaccination clinics are established for dogs, and control of the stray dog is strengthened. A dog with rabies is shown, along with the procedure followed in the laboratory for the examination of the brain, as well as a photomicrograph of the Negri bodies. Veterinarians may not approve of the picture of the outdoor vaccination clinics. However, the talk given by Dr. Richards on the control and eradication of rabies will be welcomed by all those who are acquainted with the problem.

This film presents a lot of well-documented information in a short time. In some instances, a little more explanatory script and more pictures would have improved the film. However, a good job is done of presenting the story on rabies in a minimal time and in an interesting manner; the picture certainly moves along without any drag or uninteresting parts.

Laboratory Diagnosis of Rabies.—Sound, 16 mm., black and white; running time eight minutes. Produced by the Communicable Disease Center of the U. S. Public Health Service and available from the AVMA Motion Picture Library, 600 S. Michigan Ave., Chicago 5, Ill. Rental, $5.00.

This picture shows clearly and in considerable detail the steps involved in the complete laboratory examination for rabies. The opening of the skull, removal of the brain, sectioning of the brain, making impressions, staining, examinations of the slides and photomicrographs of the Negri bodies are the steps shown in the microscopic examination. The mouse inoculation and a mouse with rabies is shown. The examination of brains of mice for Negri bodies and a photomicrograph of the Negri bodies completes the picture.

This is an excellent training film for those who are interested in learning how to conduct a complete laboratory examination for rabies. Practicing veterinarians will be able to review the steps taken in the laboratory for the detection of rabies in the specimens which they submit. Not an entertaining film — not designed for that purpose — but a good, educational film well photographed and well narrated.

Training You to Train Your Dog (Basic).—Sound, 16 mm., color; running time about thirty minutes. Procurable from Gaines Dog Research Center, 250 Park Avenue, New York 17, N. Y.

In an interesting and instructive manner, the basic principles of obedience training for the dog is shown — for dogs individually and in group classes. The use of the chain collar properly applied, and the manner in which a dog should be trained to perform such obedience commands as heeling, come, sit, stand, and stay are pictured. Nationally known obedience experts demonstrate this training before classes of children and adults, working with several breeds of dogs. The photography and the training techniques are excellent; the narration by Lowell Thomas is good. Also scenes showing some of the slightly more advanced stages of training, such as jumping over a stick and training a dog to stay down at command, are depicted.

This film will be interesting and educational to all dog owners who want to learn how to train their pets. Veterinarians will find it interesting and informative. The excellent photography and presentation make it a film that will be well received before any group.

Way of a Field Champion.—Sound, 16 mm., color; running time approximately twenty-six minutes. A Norman Wright production available from the Gaines Dog Research Center, 250 Park Avenue, New York 17, N. Y.

The opening scenes review briefly the various breeds of field dogs, such as the Beagles, English and Irish Setters, and Springer and Cocker Spaniels; also the retrievers. There are some scenes from actual field trials as well.

The main portion of this picture depicts the training of a champion retriever, Freehaven J., beginning with puppyhood. The system for training of the elementary commands, as well as the more advanced training of retrieving in water, "doubles," and hand signaling is all clearly shown. Excellent scenes of actual field trials follow the portion of the film illustrating the training procedure.

The entire film is interesting, well photographed, and well documented. It is, of course, primarily for showing before sportsmen, but veterinarians will enjoy it and benefit from the knowledge of how a field champion is trained.

THE NEWS

Late Information on Military Status of Veterinarians

Medical Aspects of Civilian Defense

Dr. C. D. Van Houweling, of the AVMA staff, represented the Association at a meeting of the American Medical Association's Council on National Emergency Medical Service in Washington, D. C., July 29, 1950. This Council is charged with the responsibility of organizing the medical profession to cope with civilian disasters of major proportions and the proper allocation and utilization of medical personnel in the Armed Forces. Representatives of the dental, pharmaceutical, veterinary, and other "health" professions have been invited to attend meetings of the Council.

As a result of meetings of the Council with representatives of other professions and governmental agencies and of later conferences, certain broad areas of agreement have been reached.

Priority Basis Agreed On

The AVMA, AMA, and ADA have agreed that the following priority should be followed in calling members of these professions to active duty:

1) Those who were permitted to pursue their professional education during World War II and who did not serve with the Armed Forces subsequent to graduation.

2) Those who were below Selective Service age during World War II.

3) Those who graduated prior to World War II but did not serve with the Armed Forces during the last war or who had active military service only after VJ Day.

4) Those who served during World War II at the time of active hostilities.

The three professional associations mentioned are investigating possible ways of activating such a system of priorities in calling officers to active duty. When an approach that is acceptable to all three professions is arrived at, every effort will be made to activate a satisfactory procurement program.

Legislation has been introduced in the Congress, which will require physicians, dentists, and other professional groups to register for, and be subject to, Selective Service. AVMA policy in regard to such legislation will be determined at the annual meeting in Miami Beach which, at time of going to press, has not convened. The policy decided upon will be reported in the October JOURNAL.

Students to Be Deferred

Students in schools of veterinary medicine will be deferred (Local Board Memorandum 7, Nov. 2, 1948) as long as they satisfactorily pursue full-time courses leading to completion of their professional education. Sufficient numbers of preprofessional students will also be deferred to maintain the freshman classes of the schools at 1948 levels. An authorized representative of the professional schools should submit the names of students of those schools, and also the names of preprofessional students who have completed at least one year of preprofessional study, who are otherwise not deferrable, to the national and state headquarters of Selective Service. They in turn will issue the required certificates (SSS Form 103) to the local boards.

The Surgeon General of the Department of the Army sent a message to the deans of medical, dental, and veterinary schools under date of July 26, 1950, which states that it is not the intention of the Army to call students to active service who hold appointments, officer or enlisted, in the Organized Reserve Corps or National Guard, irrespective of the component of the Army to which they may belong. Students holding such appointments are advised to notify their local military district or commanding officers of their status as professional students.

Furthermore, reserve officers who are scheduled for two-week periods of active duty during the next few months are assured that no extension of that status will be made without their consent.

Officer Quotas Not Being Filled by Voluntary Applications

The Department of the Army is calling 50 Veterinary Corps Reserve officers to active duty without their consent. Although it was hoped that requirements could be met through voluntary application for extended active duty, the immediate needs were not being met, thus making necessary calling of a limited number of Reserve officers. Volunteers for commissions and active duty can still reduce the number of Reserve officers who will be called without their consent.

In the event reserve officers are called to active duty, they can initiate a delay in call by applying to the Commanding General of the Army Area in which the reservist lives, via his unit commander; in the case of Air Force reservists, the application should be directed to the numerical air force for the area in which the reserve officer lives; and national guard personnel should apply to the adjutant general of the state involved, asking for six months' delay. These requests should stipulate the reasons for requesting the delay, with emphasis on the essential nature of the reserve officer's activity to the health and welfare of the nation. Reserve officers who are employees should have their employers substantiate the request for delay. These delays in call will be subject to review every six months. *(Continued on next page)*

Functions of National Security Resources Board

The National Security Resources Board is a planning organization within the Executive Office of the President of the United States. The Health Resources Office of the NSRB is charged with the responsibility of planning for the medical aspects of civilian defense and for the proper utilization of personnel in the "health" professions.

Dr. A. R. Miller, assistant chief of the U. S. Bureau of Animal Industry, was appointed some time ago as veterinary medical consultant to the Health Resources Office and has served ably in that capacity. Dr. Asa Winter, assistant to the veterinarian in charge of the Tuberculosis Eradication Division of the BAI, has recently been appointed veterinary medical consultant to succeed Dr. Miller. Dr. Miller felt that Dr. Winter's official contacts with the state veterinarians and federal veterinarians in charge in the states made it more practical for Dr. Winter to act as consultant in the future.

The AVMA is making an effort to have a committee appointed in an official advisory capacity to Dr. Winter. By having a veterinary medical advisory committee officially recognized as a part of the Health Resources Office, the profession will be in a favorable position to receive equitable consideration.

The Health Resources Office will publish, in September, a tentative guide for the organization of the medical aspects of civilian defense. This suggested plan should serve as a guide for organizing veterinarians to cope with a national emergency as the result of direct or subversive enemy action. State committees which will plan the organization of veterinarians for civil defense, will have to be appointed. The same committees may serve for the allocation of personnel in the event of total mobilization.

Draft Status of Veterinarians

Inquiries have been received in the Association's office about the status of veterinarians under Selective Service. Information from Selective Service National Headquarters states that the legal situation is this:

Along with everyone else, veterinarians 18 through 26 years of age must register for Selective Service. Those between the ages of 19 and 26 are liable for service. Under the law, Selective Service local boards are *authorized* to defer their induction, not because they are veterinarians but because they are considered essential to civilian welfare. Selective Service local boards are not *directed* by law or regulations to grant such deferments, but may be expected to do so if the veterinarian establishes the fact that he is engaged in a practice which is necessary to the maintenance of the national health, safety and interest.

These provisions do not apply to reserve officers who, of course, are subject to direct military orders.

Drs. Schlotthauer and Wegner Elected to Executive Board

The final balloting which ended July 9 in Executive Board District V (Iowa and Minnesota) and District VII (Alaska, Hawaii, Idaho, Montana, Nebraska, Oregon, North Dakota, South Dakota, Washington, Wyoming, and the Philippine Islands) resulted in the election of the following candidates for five-year terms:

District V.—Dr. C. F. Schlotthauer, Rochester, Minn., succeeds Dr. C. C. Franks of Des Moines, Iowa, who had represented the district since 1945.

District VII.—Dr. E. E. Wegner, Pullman, Wash., was reelected, having first been chosen to represent the district in 1945.

The terms of both members began at the conclusion of the annual meeting in Miami Beach last month and will terminate in 1955. Drs. W. A. Young and E. R. Maschgan of Chicago served as a Board of Tellers on July 10 and certified the foregoing results.

National Legislative Items: Interstate Movement of Brucellosis Reactors to Market and Reorganization Plan 27

Legislation that would make possible the orderly movement of brucellosis reactors to market was supported recently by the AVMA Committee on Legislation. A statement was filed with the Senate Committee on Forestry and Agriculture in favor of Senate Bill 2188 which would give the Secretary of Agriculture authority to promulgate regulations governing the interstate movement of cattle infected with brucellosis. Such authority is needed to expedite brucellosis-eradication work; similar enabling legislation was necessary years ago before the campaign to eradicate bovine tuberculosis could progress satisfactorily.

Members of the AVMA committee made personal contacts in an effort to obtain favorable action by the Senate committee on S.2188. Final action had not been taken at the time this was written, but observers reported a sympathetic attitude on the part of senators who were present for the hearing. The legislation may not reach the floor during the present session of Congress.

The AVMA is opposed, in principle, to President Truman's Reorganization Plan 27 which proposes to make the Federal Security Agency into a Department of Health, Education and Security, with cabinet rank. Strong opposition to the plan was expressed at Senate hearings by the American Medical Association, the State and Territorial Health Officers Association, the Council of Chief State School Officers, and others. A.M.A. arguments against the proposal were that it threatened to lead to still further lay control of health activities;

would prepare the way for national health insurance; would delay, if not prevent, the creation of an independent agency or department, under a doctor of medicine, to handle all health, education, and welfare (or social security) in one executive department; and would not advance federal health programs and the health of citizens but would tend to subordinate health problems to other aspects of national welfare. Since 1875, the A.M.A. has advocated creation of a federal department of health of cabinet status to coördinate and integrate all federal health activities except the medical services of the armed forces.

The statement from the A.M.A. to the House Committee on Expenditures of the Executive Departments on June 19, 1950, said, among other things: "An estimated 4.6 per cent of the population is engaged in agriculture and there is a separate Department of Agriculture. An estimated 34.6 per cent of the population is engaged in commerce and labor and there are separate departments of commerce and labor. On the other hand, 100 per cent of the population is vitally concerned with matters of health and that fact would seem to be of sufficient importance to warrant serious consideration by the Congress of the establishment of a separate and independent department — to deal with health matters."

The AVMA position is that matters of veterinary public health will also fare much better if they are administered by persons trained in the professions of medical and veterinary medical science and not confused with abstractions of "security" and "welfare."

AVMA Directory Correction

Through an oversight of the AVMA directory department, the proper changes in the "Digest of the Practice Act" for Connecticut were not made in the 1950 edition of the *AVMA Directory*. Following is the "Digest" as it should read:

Connecticut

(From Chapter 166, General Statutes, Revision of 1930. Practice Law first enacted in 1905; revised in 1930, 1941 and 1947.)

EXAMINATIONS—The first Tuesday in January and July of each year at such places as the Board may designate and at such other times and places as it shall determine.

CREDENTIALS—The applicant will present, at the time of examination, a photostat or original of his diploma and, likewise, a certificate of good moral character signed by two reputable citizens.

FEE—$25.00.

STATE REGISTRATION REQUIRED—Annual fee, $5.00.

RECIPROCITY—None.

CITIZENSHIP—No requirement.

EXECUTIVE OFFICER OF BOARD—Dr. G. Leroy Cheney, Secretary-Treasurer, Connecticut State Board of Veterinary Registration and Examination, State Office Bldg., Hartford 1, Conn.

Dr. Crawford, AVMA Representative at N.V.M.A. Meeting in South Wales

At the annual congress of the National Veterinary Medical Association of Great Britain and Ireland, held in Cardiff, South Wales, Sept. 3-8, 1950, Dr. A. B. Crawford, who is directing the coöperative program of research on foot-and-mouth disease of the U. S. Bureau of Animal Industry in Europe, acted as representative of the AVMA and carried a message from the Association to colleagues in the British Isles. This arrangement was made possible by Dr. B. T. Simms, chief of the Bureau, when advised that the N.V.M.A. had extended an invitation to appoint a representative from the AVMA.

A wide selection of papers was presented at the Cardiff meeting, which also included a number of social functions and informal gatherings for the exchange of viewpoints on professional problems. Among the topics covered in scientific papers, demonstrations, and films were deficiency diseases, fertility in cattle, modern methods of anesthesia, a symposium on sheep diseases, swine diseases, brucellosis, clinical diagnosis of abdominal ailments in dogs and cats, and other subjects of current interest.

The scientific sessions were all held at the Technical College in Cardiff. Mr. F. Knight, general secretary of the N.V.M.A., extended the invitation for a representative from this country.

WOMEN'S AUXILIARY

Georgia Auxiliary.—Officers elected at the second annual meeting of the Women's Auxiliary to the Georgia Veterinary Medical Association in Brunswick, June 26, are Mrs. Wm. L. Sippell, Tifton, president; Mrs. Chas. P. Hill, Newnan, president-elect; Mrs. A. D. Stevens, Atlanta, secretary; and Mrs. J. R. Clanton, Thomasville, treasurer.

As their project, the Auxiliary is augmenting the library at the University of Georgia Veterinary College. Money was contributed toward buying books and a plea was made to have members "collect" any books possible from their husbands for the school.

s/MRS. CHARLES C. RIFE

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Maine Auxiliary.—Twenty members and five guests of the Women's Auxiliary to the Maine Veterinary Medical Association met at Sprucewold Lodge, Boothbay Harbor, on Wednesday, July 12, for a social outing. Included in the afternoon's activities were a flower show at nearby West Boothbay, tour of the numerous gift shops, and swimming in the Lodge's salt-water pool. The play "Dulcy" was enjoyed in the evening at the Boothbay Playhouse.

Three more women joined the Auxiliary at

this gathering, bringing the present total to thirty-five members.

s/(Mrs. S. D.) EVELYN H. MERRILL, *Secretary.*

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Maritime Auxiliary Organized.—At the second annual meeting of the Maritime Veterinary Associations in Sackville, N.B., on June 27-29, the women organized an auxiliary to plan for future meetings. The women's program included trips to points of interest in the district and a tea at the Marshland's Inn.

s/E. E. I. HANCOCK, *Resident Secretary.*

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Michigan Auxiliary.—Members of the Women's Auxiliary to the Michigan Veterinary Medical Association met July 6-7 at the Michigan State College. Mrs. Lincoln Hedeman and Mrs. Wm. Riley were co-chairmen of the luncheon committee, Mrs. Russell Runnells was chairman of the entertainment committee, and Mrs. C. S. Bryan served as chairman of the hospitality committee.

s/MRS. C. S. BRYAN, *Secretary.*

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Missouri Auxiliary.—The Women's Auxiliary to the Missouri Veterinary Medical Association met June 19 for luncheon at the Kentwood Arms Hotel at Springfield, with 55 members and guests present.

Mrs. E. G. Bailey, Sr., president, presided at the meeting. Mrs. Cecil Elder reported on the auxiliary contributions to the Library Fund of the University of Missouri School of Veterinary Medicine and told of suggestions to establish a loan fund for junior students. Officers elected at the meeting are: Mrs. C. D. Lueckert, Blackwater, first vice-president; Mrs. Cecil Elder, Columbia, second vice-president; Mrs. W. R. Sheets, Farmington, secretary; and Mrs. Bevins, Treasurer.

Social activities included a film and discussion on interior decoration.

s/MRS. C. D. LUECKERT, *Secretary.*

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Wisconsin Auxiliary.—At the annual Wisconsin Veterinary Conference, June 20-21, on the campus of the University of Wisconsin at Madison, the Women's Auxiliary was entertained at a tea, the conference dinner, luncheon, and style show. New officers of the Auxiliary are Mrs. F. W. Milke, Milwaukee, president; Mrs. C. H. Reading, Madison, first vice-president; Mrs. R. O. Anderson, Elkhorn, second vice-president; and Mrs. J. T. Schwab, secretary.

s/MRS. J. T. SCHWAB, *Secretary.*

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Wyoming Auxiliary.—The Women's Auxiliary to the Wyoming Veterinary Medical Association met in Sheridan on June 18-19. Mrs. V. J. Humphreys, Worland, was elected president; Mrs. F. E. English, Cody, vice-president; Mrs. Floyd Carroll, Laramie, secretary-treasurer; and Mrs. P. E. Madsen, Sheridan, historian.

s/MRS. FLOYD CARROLL, *Secretary.*

APPLICATIONS

The listing of applicants conforms to the requirements of the administrative by-laws—Article X.

First Listing

BALTHASER, HARRY B.
4907 Market St., Philadelphia 39, Pa.
V.M.D., University of Pennsylvania, 1913.
Voucher: R. C. Snyder.

BENDER, HARRY E.
507 E. Main St., Lititz, Pa.
V.M.D., University of Pennsylvania, 1901.
Vouchers: R. C. Snyder.

BROWN, JAMES R.
900 S. Horry St., Madison, Fla.
D.V.M., St. Joseph Veterinary College, 1920.
Voucher: E. C. Cannon.

CHAMLEY, JOHN A.
Box 217, Wakonda, S. Dak.
D.V.M., St. Joseph Veterinary College, 1921.
Voucher: R. M. Scott.

COOK, MAJOR VICTOR J., USAF, V.C.
Box 14, Goodfellow Air Force Base, Texas.
D.V.M., Iowa State College, 1930.
Vouchers: R. R. Miller and W. O. Kester.

HEMPY, CAPT. JACK H., USAF, V.C.
5700 Med. Sqd., Albrook Air Force Base, Canal Zone.
D.V.M., Ohio State University, 1941.
Vouchers: R. R. Miller and W. O. Kester.

HIETT, ALLEN A.
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1950 Graduate Applicants

First Listing

The following are graduates who have recently received their veterinary degree and who have applied for AVMA membership under the provision granted in the Administrative By-Laws to members in good standing of junior chapters. Applications from this year's senior classes not received in time for listing this month will appear in later issues. An asterisk (*) after the name of a school indicates that all of this year's graduates have made application for membership.

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TYLER, WARREN E., D.V.M.
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WEATHERLY, THOMAS R., D.V.M.
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U. S. GOVERNMENT

Poultry Inspectors Needed.—The Dressed Poultry Inspection Service of the U.S. Department of Agriculture is in need of qualified, graduate veterinarians to fill vacancies in the force. Due to increased interest in the evisceration of poultry under federal inspection, openings are available in various sections of the country.

Entrance salary is $3,825 per annum based on a 40-hour, 5-day work week. Compensation is made for ordered overtime. No written examination is required. Appointments are made on the basis of applications submitted. Opportunities for advancement are excellent.

Veterinarians interested are requested to phone, write, or wire the U.S. Department of Agriculture, Production and Marketing Administration, Dairy and Poultry Inspection and Grading Division, at one of the following addresses giving full information as to availability and location preferences:

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c/o Dr. Roy E. Willie, Room 406 Post Office Bldg., Omaha 2, Neb. Phone Atlantic 8212.
c/o Dr. J. R. Harney, Room 604H, U.S. Custom House, Second and Chestnut St., Philadelphia, Pa. Phone Market 7-6000.
c/o Dr. R. B. Mericle, Post Office Box 387, Room 470 Federal Bldg., Sacramento, Calif.

s/ROY E. WILLIE, *Regional Supervisor, Poultry Inspection Section USDA.*

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Colonel Barta Returns from Colombia.—Colonel James C. Barta returned from Colombia

on March 20, after completing an extensive and comprehensive survey of the milk hygiene and dairy situation in that country. Colonel Barta's survey was made for the Pan American Sanitary Bureau at the request of the Colombian government. While in that country, he conferred with several governors and other state officials. His contributions were greatly appreciated in that country and he was officially commended by representatives of the Colombian government and the Pan American Sanitary Bureau for his exhaustive and helpful survey. —*USAF Veterinary Notes, June 1, 1950.*

AMONG THE STATES AND PROVINCES

California

State Association.—The annual convention of the California State Veterinary Medical Association was held in Berkeley, June 26-28, 1950. The following program was presented.

Drs. B. Dean, chief, veterinary public health, San Francisco; J. B. Enright and T. J. Hage, University of California: "Canine Encephalidities."

Dr. E. R. Quortrup, livestock inspector, San Diego: "Diseases of Furbearing Animals" (with illustrations).

Drs. P. D. DeLay, S. L. Jamison, and C. E. Taylor, Division of Animal Industry, State Department of Agriculture: "Bovine Leptospirosis in California."

Dr. S. P. Lucia, M.D., University of California Hospital, San Francisco: "Diseases of the Heart."

Dr. F. X. Gassner, professor of endocrine research, endocrine section, experiment station, Colorado A. & M. College, Fort Collins: "Applied Endocrinology in Small Animal Medicine" (with illustrations) and "Applied Endocrinology in Large Animal Practice" (with illustrations).

Dr. W. H. Riser, Skokie, Ill.: "Diseases of the Kidney" (with illustrations) and "Posterior Paralysis in the Dog."

Drs. T. J. Hage and J. R. Douglas, University of California: "Parasitology and the Small Animal Clinician."

Dr. G. Humphrey, State Department of Health: "Survey of Rabies Activities in California."

Dr. T. J. Hage: "Some Interesting Cases in the Small Animal Clinic of the University of California School of Veterinary Medicine."

Dr. E. C. Jones, Los Angeles: "Report on the American Animal Hospital Association Meeting."

Dr. H. G. Johnstone, University of California: "Protozoan Diseases."

Drs. L. R. Vawter, associate professor in veterinary medicine, University of Nevada; and M. R. Miller, chemist, experiment station, University of Nevada, Reno: "Halogeton Glomeratus—A Range Plant Poisonous to Sheep and Cattle" (with illustrations).

Dr. H. W. Johnson, professor of veterinary surgery, veterinary hospital, Colorado A. & M. College, Fort Collins: "Fractures and Their Treatment in the Horse and Cow" and "Diseases and Surgical Techniques in the Cow."

Dr. J. D. Ray, director, Biological Department, Corn States Serum Co., Omaha, Neb.: "Differential Diagnosis in Swine Practice."

Dr. L. R. Vawter: "White Muscle Disease of Calves and Lambs" (with illustrations).

Dr. K. G. McKay, University of California, was moderator of a panel on "Bovine Sterility."

Dr. P. T. Cupps, University of California: "Variations in the Estrous Cycle and Breeding Efficiency."

Dr. P. W. Gregory, University of California: "Hereditary Sterility in Cattle."

Dr. M. Kleiber, University of California: "Isotopes as Metabolic Tracers—A New Tool for Metabolic Research."

Dr. W. S. Gochenour, director, Biological Laboratories, Pitman-Moore Company, Zionsville, Ind.: "Recent Advances in the Field of Biological Products."

Dr. E. H. Gray, University of California: "Some Considerations of Biological and Diagnostic Applications of X-Ray."

Dr. C. D. Van Houweling, director of professional relations, AVMA, Chicago, Ill.: "Building Professional Recognition Through the AVMA."

Dr. K. C. McKay: "Changing Agriculture" (with illustrations).

s/CHARLES S. TRAVERS, *Executive Secretary.*

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North San Joaquin Valley Association.—New officers of the North San Joaquin Valley Veterinary Medical Association are Drs. Leslie Burns, Sonora, president; F. W. Koebel, Gustine, vice-president; and V. E. Graff, Oakdale, secretary-treasurer.

s/V. E. GRAFF, *Secretary.*

Colorado

Regulations for Identification of Graded Dressed Poultry.—The following regulations were adopted by the Colorado State Board of Health on March 13, 1950, and by the Colorado State Agriculture Commission on May 12:

> All dressed poultry sold within the State of Colorado, which bears a grade designation, but has not been officially inspected by an agency of either State or Federal Government, shall bear the statement "not inspected" in block lettering of at least 12 point pica type. Such declaration shall be placed below and contiguous with the grade designation.

District of Columbia

Drs. Mingle and Stein Honored by Secretary Brannan.—Among the 65 "Superior Service"

awards made on May 25, 1950, by Secretary Brannan for outstanding public service, two went to BAI veterinarians. Dr. C. K. Mingle was cited for "the leading part played in developing the background and shaping policies for eradication of brucellosis of domestic animals in the United States and foreign countries." Dr. Mingle joined the Pathology Division of the BAI in 1937 and served with this division until 1947, with the exception of 1942 when he was sent to England by the Office of Foreign Agricultural Relations to help establish a *Brucella abortus* vaccine laboratory for the British government. He has done veterinary research on brucellosis of livestock and has published a number of articles on this subject. He is now assistant to the head of the Bureau's Tuberculosis Eradication Division and is currently active on the Committee on Public Health Aspects of Brucellosis of the National Research Council.

Dr. Stein was honored "for meritorious research in the field of animal disease prevention and control, and especially for his contributions concerning anthrax and equine infectious anemia of domestic animals." Dr. Stein, an authority in veterinary bacteriology, is serving with the Department's Division of Pathology of the BAI. In 1946, he was a member of the special mission to Haiti of the Pan American Sanitary Bureau. Dr. Stein has made outstanding contributions to research work on anthrax, equine infectious anemia, and hemorrhagic septicemia, and has published numerous reports and presented many lectures before scientific societies dealing with these diseases.

s/CLIFTON D. LOWE.

Georgia

State Association.—The forty-fourth annual meeting of the Georgia Veterinary Medical Association was held in the Oglethorpe Hotel, Brunswick, on June 26-27, 1950. The program follows.

Dr. H. C. Stephenson, Department of Small Animal Diseases and Materia Medica, New York State Veterinary College, Cornell University: "Veterinary Hospitals" (with illustrations) and "Ten New Drugs."

Dr. D. R. Burley, School of Veterinary Medicine, Athens: "Aids to the Diagnosis of Lameness."

Dr. W. M. Coffee, LaCenter, Ky., president-elect of the AVMA: "General Practice" (with illustrations).

Dr. E. F. Thomas, School of Veterinary Medicine, Athens: "Problems in Cattle Practice."

Mr. Walter Carlson, research pathologist, Fromm Laboratories, Grafton, Wis.: "Clinical Aspects of Canine Hepatitis."

Dr. T. J. Jones, dean, School of Veterinary Medicine, Athens: "The Relationship of the Practicing Veterinarian to the Livestock Industry."

Dr. E. R. Frank, professor of surgery, Kansas State College, Manhattan: "Bovine Surgery" and "Equine Surgery."

Dr. J. R. Knappenberger, public relations, Norden Laboratories, Lincoln, Neb.: "General Practice Pointers from the Field" and "The Importance of Service and Sanitation in General Practice."

Dr. W. L. Sippel, director, Veterinary Laboratories, Coastal Plains Experimental Station, Tifton: "Swine Diseases." Drs. B. E. Carlisle, Camilla, and T. C. Ross, McRae, discussed this paper.

Officers elected are Drs. H. A. Houston, Blakely, president; F. E. Ducey, Savannah, president-elect; and Chas. C. Rife, Atlanta, secretary-treasurer and editor.

s/CHAS. C. RIFE, *Secretary.*

Illinois

Eastern Association.—The summer meeting of the Eastern Illinois Veterinary Medical Association was held at the Hotel Tilden Hall, Champaign, on June 5. Dinner was served to 50 members and guests. Dr. R. K. Shideler, Danville, presented an illustrated discussion on "Rumenotomy and Cesarean Section in the Cow."

s/H. S. BRYAN, *Secretary.*

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Dr. Brasmer Appointed to Veterinary Faculty.—Dr. T. H. Brasmer (COLO '47) has been appointed instructor in the Department of Veterinary Clinical Medicine at the University of Illinois College of Veterinary Medicine.

Dr. T. H. Brasmer

For the past two and one-half years, Dr. Brasmer has been small animal clinician at the Slatter Veterinary Service, Danville. He pre-

viously had been employed as an assistant in the small animal clinic of the New York State Veterinary College. He is a member of the Illinois State and the Eastern Illinois veterinary medical associations, and of the AVMA.

Indiana

Indiana-Illinois Association.—On June 16, the Indiana-Illinois Veterinary Medical Association met in Deming Park, Terre Haute, Ind. Dr. A. B. Douglas, assistant to the Indiana state veterinarian, spoke on "Sale Barn Testing of Cattle." Dr. L. M. Hutchings, Veterinary Department, Purdue University, discussed "Swine Diseases." Officers of this association are Drs. E. K. LeDune, Sullivan, Ind., president; H. R. Basinger, Wheatland, Ind., vice-president; and Paul Wallace, Cynthiana, Ind., secretary-treasurer.

s/J. L. KIXMILLER, *Resident Secretary.*

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Sixth District Association.—The Sixth District Veterinary Medical Association met in Sheridan on June 1, 1950. Dr. B. A. McErlean from Ireland, who is studying diseases of swine at Purdue University, told of an unusual septicemia affecting 8- to 14-weeks-old pigs in his native country. Dr. L. R. Doyle of Purdue University spoke on "Swine Erysipelas and Rheumatoid-like Conditions."

Dr. Roe King, president of the association, and Mrs. King were hosts to the members at this meeting.

s/J. L. KIXMILLER, *Resident Secretary.*

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Dr. and Mrs. Reynolds Celebrate Golden Wedding Anniversary.—Dr. (KCVC '02) and Mrs. U. B. Reynolds, Fort Branch, celebrated their golden wedding anniversary on July 29, 1950, with their four children, and friends. Dr. Reynolds, widely known in southern Indiana, has been in practice forty-eight years. He is to be congratulated for having conducted an active, large animal practice over such a long period.

s/J. L. KIXMILLER, *Resident Secretary.*

Iowa

Swine Brucellosis Conference.—A swine brucellosis conference was held under the sponsorship of the Iowa Veterinary Research Institute at Ames on June 15-16. After the address of welcome by Dr. H. D. Bergman, dean, Division of Veterinary Medicine, Iowa State College, the following program was presented.

Dr. H. E. Biester, associate director, the Veterinary Research Institute, Iowa State College: "History of Swine Brucellosis Research at the Veterinary Research Institute."

Dr. C. K. Mingle, Tuberculosis Eradication Division, U.S. BAI, Washington, D.C.: "The Pathogenesis of Swine Brucellosis."

Dr. E. D. Hubbard, Grinnell, field collaborator, Veterinary Research Institute: "An Investigation of Brucellosis Control in Swine Herds on Iowa Farms" and "The Procurement and Handling of Blood Samples from Swine: Bleeding Methods, Equipment, and Hazards."

Dr. H. L. Foust, head, Department of Veterinary Anatomy, Iowa State College: "The Procurement and Handling of Blood Samples from Swine: The Anatomy of Swine in Relation to Anterior Vena Cava Bleeding."

Dr. T. S. Leith, Veterinary Research Institute: "Brucellosis Control in a Large, Highly Infected Herd."

Dr. R. J. Milleret, BAI, Jefferson City, Mo.: "Field Experiences in Swine Brucellosis Control."

Dr. H. U. Garrett, chief, Division of Animal Industry, Des Moines: "The Role of State Field Veterinarians in the Iowa Control Plan."

Dr. C. W. Brown, inspector in charge, BAI, Des Moines: "The Role of Federal District Supervisors in the Iowa Control Plan."

Dr. A. B. Hoerlein, Veterinary Research Institute: "Swine Brucellosis Investigations at the Veterinary Research Institute."

After swine bleeding demonstrations, all members of the conference were provided with swine of various sizes and equipment for bleeding and restraint so that they might have the advantage of actual practice in techniques demonstrated.

The program closed with a discussion of the Iowa certification plan.

s/C. W. BROWN, *Veterinarian in Charge, U. S. BAI, Des Moines.*

Kansas

Appointments and Resignations in the School of Veterinary Medicine.—Dr. Melvin J. Swenson (KSC '43) was appointed assistant professor in the Department of Physiology, Kansas State College, on July 1, 1950. Dr. Swenson obtained his Ph.D. degree from Iowa State College in 1950 as an AVMA fellow. His research was in the field of thiamine and vitamin B_{12}. While at Iowa State College, he held the position of assistant professor of veterinary research. Dr. Swenson is a World War II veteran, married, and has one child. His duties will be teaching and research in the Department of Physiology.

Dr. Richard H. Goodale (MSC '50) was appointed instructor in the Department of Anatomy, Kansas State College. Dr. Goodale is a veteran of World War II, is married, and has two children.

Dr. John D. Wheat (CORN '45), assistant professor in the Department of Surgery and Medicine, has resigned to accept a position with the School of Veterinary Medicine, University of California, Davis.

Dr. J. E. Mosier (KSC '45) was appointed as-

sociate professor, Department of Surgery and Medicine, effective Aug. 15, 1950. He is married and has one child. For the past year Dr. Mosier has been employed as assistant professor of veterinary medicine, College of Veterinary Medicine, University of Illinois, Urbana.

s/E. E. LEASURE, *Dean.*

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State Board Examination Results.—Of 80 veterinarians who recently took the state board examinations, 79 passed. Of this number, 35 gave mailing addresses out of the state, leaving 44 in the state. Three schools, Missouri, Tuskegee Institute, and Kansas were represented.

s/CHAS. W. BOWER, *Resident Secretary.*

Maryland

State Association.—On June 29-30, 1950, the Maryland State Veterinary Medical Association met in the Hotel George Washington, Ocean City. The following program was presented.

Dr. Bernard Gibson, London, Ohio: "General Practice with Special Reference to Swine."

Dr. Richard Gilyard, Waterbury, Conn.: "Cattle Practice."

Dr. M. L. Morris, New Brunswick: "Nutrition of the Hospitalized Dog."

Dr. Walter H. Mitchell, Annapolis: "Early Pregnancy Diagnosis in Mares."

A forum on "The Present Economic Status as it Affects Owners of Animal Hospitals" was composed of Drs. Mark L. Morris, New Brunswick, N.J.; Milton P. Sause, Baltimore; John F. McClure, Hyattsville; and J. Walter Hastings, Jr., Cambridge.

Dr. Bloxom Daugherty, Delmar, Del.: "Poultry Practice."

Dr. John D. Gadd, Towson: "Report of Delegate to the AVMA."

s/J. WALTER HASTINGS, SR., *Secretary.*

Michigan

State Association.—The sixty-eighth annual meeting of the Michigan State Veterinary Medical Association was held July 6-7, 1950, at the Michigan State College in East Lansing. The program follows.

Dr. Wm. G. Magrane, Mishawaka, Ind.: "Canine Ophthalmology" (with illustrations).

Dr. F. D. Egan, Farmington: "The Tale of Dog's Tails—and Ears."

Mr. C. M. Hardin, director of the experiment station, and Mr. A. C. Baltzer, dairy extension specialist: "M.S.C. Research in Cattle Breeding Deficiencies."

Dr. I. F. Huddleson, central brucella station, and Dr. C. H. Hays, federal inspector in charge: "The Ring Test for Brucellosis."

Mr. Harvey Dans, service engineer, Bell Telephone Company, Lansing: "The Mobile Phone."

Dr. W. L. Boyd, director, University of Minnesota School of Veterinary Medicine: "The Treatment of Retained Fetal Membranes" and "The Relation of the Veterinarian to Artificial Insemination."

Dr. A. S. Schlingman, Parke, Davis and Company, Detroit: "Recent Developments in Antibiotic Therapy in Veterinary Medicine."

Dr. A. E. Erickson, Charlotte: "Report of the Delegate to the AVMA House of Representatives."

Dr. W. M. Coffee, LaCenter, Ky., president-elect of the AVMA: "General Practice" (with illustrations).

Dr. G. R. Moore, Michigan State College: "Recent Trends in Cattle Therapy."

The clinic on large animal surgery included demonstrations of handling of bovine vaginal prolapse, correction of rectal prolapse in swine, and scrotal hernia operation in swine. The small animal clinic illustrated surgical techniques for treatment of urinary calculi in the male dog, open reduction of fractures, and cesarean section of the bitch under local anesthesia. Helpful hints and time-saving short cuts in veterinary practice were also discussed.

New officers of the Association are Drs. F. D. Egan, Farmington, president; David Ellis, Memphis, first vice-president; F. M. Lamoreaux, Grand Rapids, second vice-president; W. O. Brinker, East Lansing, third vice-president; and B. J. Killham, East Lansing, secretary-treasurer.

s/B. J. KILLHAM, *Secretary.*
GLEN REED, *Resident Secretary.*

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New Appointments to MSC Faculty.—Drs. L. H. LaFond (MSC '23) and Don M. LeDuc, M.D., have been appointed as lecturers in the Department of Surgery and Medicine and will contribute to the veterinary teaching program, especially during the senior year.

Dr. LaFond practiced in Detroit and is now hospital inspector for the American Animal Hospital Association.

Dr. LeDuc is chief of surgery at the Edward W. Sparrow Hospital in Lansing, certified specialist in surgery, and regent for the State of Michigan for the Ambulatory Fracture Association.

s/C. S. BRYAN, *Dean.*

Missouri

State Association.—The sixtieth annual summer meeting of the Missouri Veterinary Medical Association was held at the Colonial Hotel in Springfield on June 19-20, 1950. The program follows.

Dr. Horace T. Barron, Department of Surgery and Medicine, A. & M. College of Texas, College Station: "Bovine Obstetrics."

Dr. Ralph Ruggles, Moline, Ill.: "Phases of Small Animal Practice."

Dr. A. H. Groth, dean, Missouri Veterinary College, Columbia: "Status of Missouri Veterinary College."

Dr. H. E. Curry, state veterinarian of Missouri: "Present Laws and Proposed Legislation of Interest to Veterinarians."

Dr. J. D. Ray, Omaha, Neb.: "Diagnosis of the New Swine Diseases."

Dr. Martin Baum, Denver, Colo.: "The Veterinarians' Role in Municipal Inspections."

Dr. A. H. Quin, Kansas City, Mo.: "A Résumé of Advancements in Veterinary Therapy."

Dr. G. T. Easley, Turner Ranch, Sulphur, Okla.: "Infertility of the Bovine Animal—Male and Female."

Dr. R. L. Anderes, Kansas City, Mo.: "Veterinarian's Legal Responsibilities to His Clients, the Public, and His Employees."

Dr. B. E. Foote, Memphis, Tenn.: "Problem Skin Conditions of Dogs."

Officers for the coming year are Drs. H. D. Rodabaugh, Kirksville, president; E. W. Millenbruck, Carthage, vice-president; J. L. Wells, Kansas City, secretary-treasurer.

s/GLEN DUNLAP, *Resident Secretary*

Montana

State Association.—The fortieth annual meeting of the Montana Veterinary Medical Association was held June 15-17, 1950, at the Finlen Hotel in in Butte. The program follows.

Dr. H. S. Cameron, School of Veterinary Medicine, Davis, Calif.: "Reproduction in Dairy Cattle" and "The University of California Veterinary Clinic."

Dr. R. L. Burkhart, clinical research, Lederle Laboratories, Pearl River, N.Y.: "Aureomycin Therapy in Veterinary Medicine."

Dr. J. E. McCoy, College of Veterinary Medicine, Washington State College, Pullman: "Digestive Disturbances of the Cow" and "Lameness of Horses."

Dr. E. C. Stone, College of Veterinary Medicine, Washington State College, Pullman: "Demonstration of Drugs Affecting the Circulatory System."

Dr. J. Micuda, Phoenix, Ariz.: "The Role of Blood Transfusions in Veterinary Medicine" and "Ear Trimming of Dogs."

Dr. R. L. Burkhart, Lederle Laboratories, Pearl River, N.Y.: "Rabies and Canine Distemper Viruses Modified by Chicken Embryo."

Dr. Carl L. Larson, medical director, Rocky Mountain Laboratory, National Institutes of Health, Hamilton: "Brucellosis."

Dr. W. L. Jellison, parasitologist, Rocky Mountain Laboratory, Hamilton: "Tick Paralysis in Cattle," a color motion picture of a 1950 outbreak in Western Montana.

Dr. J. Frederick Bell, surgeon, Rocky Mountain Laboratory, Hamilton: "Encephalitis—Studies at the Rocky Mountain Laboratory."

Dr. W. H. Burkitt, Lederle Laboratories, Pearl River, N.Y.: "Minerals, Vitamins, and Fertile Fallacies."

Drs. H. F. Wilkins, state veterinarian, and G. W. Cronen, inspector in charge, U.S. BAI, Helena: "Official Disease Control Work."

Dr. Hadleigh Marsh, Bozeman: "Report of the Veterinary Research Laboratory."

Officers elected at the meeting are Drs. H. W. Jacobson, Havre, president; H. E. Ferguson, Butte, vice-president; and E. A. Tunnicliff, Bozeman, secretary-treasurer. New members of the Executive Board, in addition to the new officers, are Drs. R. D. Read, Ronan; G. C. Halver, Glendive; and A. M. Jasmin, Helena.

s/E. A. TUNNICLIFF, *Secretary*.

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Dr. Marsh Relinquishes Direction of Research Laboratory—Dr. Tunnicliff New Director.—Effective July 1, 1950, Dr. Hadleigh Marsh relinquished his position as director of the Veterinary Research Laboratory of the Montana Agricultural Experiment Station, Bozeman, and was succeeded by Dr. E. A. Tunnicliff. Dr. Marsh has been associated with disease-control work in the state for over thirty years, having been bacteriologist for the State Livestock Sanitary Board from 1919 to 1929 and was later veterinary pathologist and director of veterinary research at the Montana State College from 1929 to the present time. He retired from active direction of the research laboratory to permit time to write reports on a number of research projects now completed or nearing completion; he will remain on the staff.

Dr. Marsh was born in Wisconsin, obtained his bachelor's degree at the University of Chicago in 1909, and his veterinary degree from George Washington University in 1912. He was an assistant in poisonous plant investigations, Bureau of Plant Industry, USDA, from 1908 to 1912 while attending veterinary school and later was a veterinary inspector for the BAI for four years before going to Montana.

In World War I, Dr. Marsh was on active duty with the Veterinary Corps, having been commissioned in June, 1917, and discharged in July, 1919.

Dr. Tunnicliff has been associated with Dr. Marsh in work at the Montana station and research laboratory since 1930. Both men are well known for their investigations of sheep and cattle diseases and diseases of other species.

Dr. Tunnicliff was granted leave from the research laboratory in 1933 and 1944 for foreign service. He was technical advisor on animal diseases to the governments of China and India and visited veterinary schools, animal disease research institutions, and animal disease-control bureaus in these countries. Before returning to the United States, Dr. Tunnicliff studied at animal disease research laboratories at Pretoria as guest of the government of the Union of South Africa. Although he has done some work with swamp fever and internal parasites of

horses, he is best known for his investigational work on sheep diseases.

s/A. M. JASMIN, *Resident Secretary.*

New York

State Society.—The fifty-ninth annual meeting of the New York State Veterinary Medical Society was held in the Saranac Inn, Saranac, on June 29-July 1, 1950. The program follows:

Dr. Asa Winter, assistant in charge, Tuberculosis-Eradication Division, U.S. BAI, Washington, D.C.: "The Federal Bureau of Animal Industry and Its Relation to Livestock Disease-Eradication Programs."

Dr. E. J. Frick, head, Department of Surgery and Medicine, Kansas State College, Manhattan: "The Business of Being a Practitioner Today and Tomorrow."

Dr. A. H. Quin, head, Professional Service Division, Jensen-Salsbery Laboratories, Inc., Kansas City, Mo.: "Public Relations."

Dr. C. L. Blakely, director of surgery, the Angell Memorial Animal Hospital, Boston, Mass.: "A Surgical Grab Bag" and "Safe Anesthesia in Small Animal Practice."

Dr. L. B. Jensen, Ph.D., chief bacteriologist, Swift and Company, Chicago, Ill.: "Control of Microörganisms in Meat and Meat Foods."

Dr. W. M. Coffee, LaCenter, Ky., president-elect of the AVMA: "General Routine Practice."

Dr. R. J. Garbutt, American Society for the Prevention of Cruelty to Animals, New York City: "Simplified Surgery of the Eye."

Dr. F. J. Kingma, chairman, Department of Veterinary Physiology and Pharmacology, The Ohio State University, Columbus: "Fluid Therapy."

Dr. B. J. Finkelstein, Brooklyn: "Diagnosis of Common Heart Ailments and Treatment from the Practitioners' Viewpoint."

Dr. J. A. Baker, professor of bacteriology, Laboratory for Animal Virus Research, New York State Veterinary College, Ithaca: "Infectious Hepatitis of Dogs."

Dr. J. S. Crawford, New Hyde Park, N.Y.: "Surgical Correction for Recurrent Urinary Calculus in Male Dogs."

Dr. A. G. Danks, professor of veterinary surgery, New York State Veterinary College, Cornell University, Ithaca: "Diagnosis of Bone Diseases in Horses" (with illustrations).

Dr. L. R. Barnes, veterinarian in charge, tuberculosis eradication, USDA, Albany, N.Y.: "Outbreak! The Story of Foot-and-Mouth Disease."

Dr. I. G. Howe, director, New York State Department of Agriculture and Markets, Albany: "Livestock Health of Canadian Cattle as seen in New York State."

Dr. R. A. McIntosh, head, Department of Medicine, Ontario Veterinary College, Guelph: "Interesting Clinical Cases."

Dr. D. O. Bixby, field veterinarian, New York State Department of Agriculture and Markets, Norfolk, N.Y., was moderator of a symposium on "Disease Control Program and Disease Control Committee Work as It Is Carried out in Franklin County." Other members of the symposium were Drs. W. S. Stone, assistant director BAI, Albany; G. E. Gingras, Malone; and Mr. Fred Fallon, farmer, Constable.

Dr. C. P. Zepp, Sr., president of the AVMA spoke at the banquet.

s/J. J. REGAN, *Secretary.*

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New York State Veterinary College Honor Day Exercises.—Dr. Peter Olafson presided at the annual Honor Day exercises at the New York State Veterinary College, Cornell University, on May 11, 1950 (*see* picture for names of graduates). Mr. W. A. Wentworth, secretary, the Borden Company Foundation, Inc., presented the Borden Veterinary Scholarship Award ($300) to Miss Jean Holzworth, as the senior who attained the highest scholastic record in all veterinary studies for the first three years.

Dean William A. Hagan, acting for the faculty, presented the following awards:

Those who participated in the annual Honor Day exercises of the New York State Veterinary College were (seated, left to right)—Dr. Peter Olafson, Dr. Frank W. Schofield, Miss Jean Holzworth, Miss Marion Schott, Mr. W. A. Wentworth, Dean W. A. Hagan.

Second row—Anson C. Lewis, Walter J. Sickles, Jacob C. Siegrist, Donald H. Crispell, William F. Haenel, LaVerne M. Beakman.

Third row—Milton E. Adsit, Malcolm C. Peckham, Robert J. Harris, Henry L. Szlachta, William I. Gay, Eugene M. Jones.

The Horace K. White Prizes for the students whose academic records for the entire veterinary course were highest: Miss Jean Holzworth,

first, $75; Henry L. Szlachta, second, $25; Donald H. Crispell and Jacob C. Siegrist, honorable mention.

The Jane Miller Prizes for the best work in veterinary physiology, to Miss Marion E. Schott, first, $25; Edwin J. Hoff, Jr., second, $15; Edwin E. Blaisdell and John W. McVicar, honorable mention. All winners of this award were sophomores.

The Charles Gross Bondy Prizes for the best work in the courses in practical medicine and surgery of small animals, to LaVerne M. Beakman, first, $25; Robert J. Stack, second, $15; William I. Gay and Stanley E. Garrison, honorable mention.

The Anne Besse Prizes for the best work in medicine and clinical diagnosis, to Donald H. Crispell, first, $25; Milton E. Adsit, second, $15; William F. Haenel, honorable mention.

The James Gordon Bennett Prizes for the students who showed the greatest humaneness in handling animals, with special reference to the use of anesthesia, to Anson C. Lewis, first, $25; William F. Haenel, second, $15; Stewart R. Rockwell, honorable mention.

The Mary Louise Moore Prize for the best work in bacteriology, to Miss Jean Holzworth, $40; Henry L. Szlachta, honorable mention.

The Poultry Disease Essay Prize ($50) for the best essay on a topic in the field of poultry diseases, to Malcolm C. Peckham for his paper on "Newcastle Disease."

The Alpha Psi Prize ($25 U.S. savings bond) to the member of the graduating class who has shown by his scholarship, character, and breadth of interest that he is best equipped to advance the standards of veterinary science, to Robert J. Harris.

The New York State Veterinary Medical Society Prizes for the best case reports by seniors presented for publication in *Veterinary News*, the organ of the Society, to William I. Gay and Eugene M. Jones, first, $25; Milton Schmidt, Jr., second, $15; Jacob C. Siegrist, third, $10; Paul W. Padget and Daniel J. Hannigan, honorable mention.

Women's Auxiliary to the AVMA Prize ($25) to a member of the fourth year class who has best advanced the standing of the veterinary college on the campus by special contributions of an extra-curricular nature, to Walter J. Sickles.

The Medal of the Sons of the American Revolution for leadership, soldierly bearing, and excellence in the theoretical and practical work in the Advanced R.O.T.C. course, to Nils O. Isachsen, a junior.

Dr. Frank W. Schofield, professor and head of the Department of Pathology, Ontario Veterinary College, Guelph, addressed the group on "The Values by which Men Live."

s/W. A. HAGAN, *Dean*.

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Research Laboratory for Diseases of Dogs Established at Cornell.—Construction has begun on the newly established Cornell Research Laboratory for Diseases of Dogs, as an addition to the New York State Veterinary College. Funds for its construction and initial operation were presented to the University by donors who wished to found a permanent center where fundamental long-range research on contagious diseases of dogs could be planned and conducted by skilled scientists. Results, correlated with similar studies on diseases of dogs, particularly those of viruses infecting several species, should prove of great value.

The work will be under the direction of Dr. James Andrew Baker (CORN '40), professor of bacteriology in the veterinary college, who re-

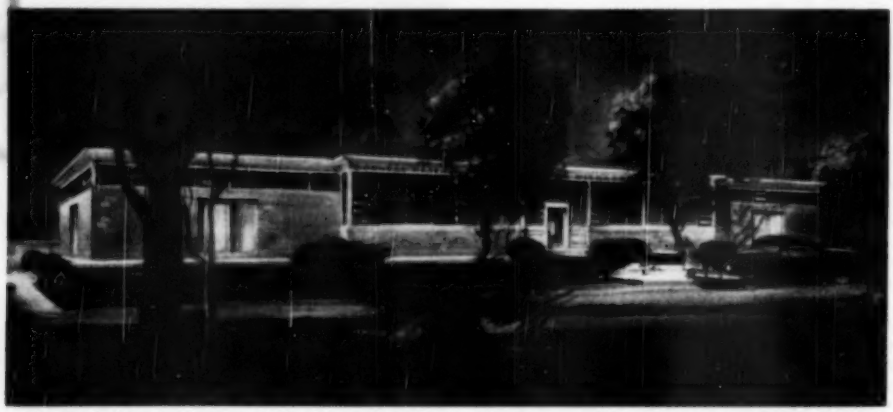

Fig. 1—Architect's drawing of the Research Laboratory for Diseases of Dogs now under construction at Cornell University.

ceived his B.S. and M.S. degrees at Louisiana State University. Dr. Baker isolated viruses from calf pneumonia and from pneumonitis of cats at the Rockefeller Institute for Medical Research and, in collaboration with Dr. Ralph B. Little, was the first to isolate living Lepto-

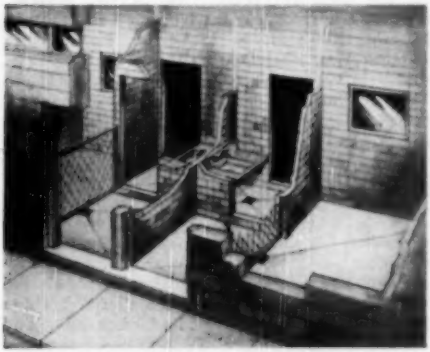

Fig. 2—Cut-away section showing typical kennel, dressing room, and entry unit.

spira from cattle in the United States. At Grosse Isle in Canada, during the war, he developed an original method of virus transfer which he later adapted to hog cholera virus and now is being used on other viruses.

The new laboratory, designed by Professor S. M. Barnette, Cornell College of Architecture, specifically for work upon viruses and other contagious organisms, contains two main laboratory sections, the Giralda Division established by Mrs. M. Hartley Dodge of Giralda Farms, and the Nancy Sayles Day Division established by Colonel and Mrs. Lee Garnett Day of Cobble Mountain Farm. Fifty veterinarians are among the long list of donors; others represent dog owners, industrial companies, kennel clubs, and breed clubs.

Dean W. A. Hagan of the veterinary college believes that intensive, carefully planned work by a staff of specialists using modern equipment in a building scientifically planned and constructed specifically for this purpose cannot fail to produce results important to the dog world and our animal population generally.

New Jersey

State Association.—The Veterinary Medical Association of New Jersey held its sixty-sixth semiannual meeting June 22-23, 1950, at Chalfonte-Haddon Hall, Atlantic City. The program follows.

Dr. Gerry B. Schnelle, The Angell Memorial Animal Hospital, Boston, Mass.: "X-Ray Interpretation—Including Newer Diagnoses."

Dr. M. G. Fincher, New York State Veterinary College, Cornell University, Ithaca: "Current Problems in Cattle Practice with Particular Reference to Sterility."

Dr. E. W. Smillie, Princeton, was moderator of a panel on "The Local Veterinarian—Meat Inspection—Consumer Protection." Other members of the panel were Drs. W. P. Doherty, Bridgeton; John Gray, Newton; James Herron, Bordentown; and Oscar Sussman, Princeton.

Dr. M. W. Allam, School of Veterinary Medicine, University of Pennsylvania, Philadelphia: "Surgical Diagnosis of Foreleg Paralysis in the Dog."

Dr. A. K. Kuttler, in charge, Tuberculosis Eradication Division, U.S. BAI, Washington, D.C.: "The Application of Research and Experience in the Eradication of Brucellosis."

Dr. S. F. Scheidy, Sharp & Dohme, Inc., Glenolden, Pa.: "Some Sulfonamides and Antibiotics in the Veterinarian's Practice Today."

s/J. R. PORTEUS, *Secretary.*

• • •

Telephone Directory Listings.—Veterinarians in the Trenton, N.J., area, which includes part of Pennsylvania, are proud of the classified telephone directory listing of veterinarians in this area. The listing includes 31 veterinarians and eight animal hospitals. Of all these, not one appears in bold face type or boxes, or with pictures of hospitals or animals, etc. No veterinarian states that he is a specialist. There is nothing to indicate that the listing is other than that adopted by ethical physicians.

s/J. R. PORTEUS, *Secretary.*

North Dakota

State Association.—The forty-fifth annual meeting of the North Dakota Veterinary Medical Association was held in the Patterson Hotel, Bismarck, on June 4-6, 1950. The program follows.

Dr. J. D. Ray, Corn States Serum Co., Omaha, Neb.: "Swine Diseases" and "Diseases of Sheep."

Dr. Martin Roepke, University of Minnesota, St. Paul: "Acetonemia" and "The Milk Ring Test for the Diagnosis of Brucellosis."

Dr. F. M. Shigley, Bureau of Animal Industry, Bismarck: "The Veterinarian's Responsibility to Organized Disease Control Programs."

Dr. G. C. Holm, Fargo: "Artificial Insemination and Bovine Sterility Problems."

Dr. E. R. Frank, Kansas State College, Manhattan: "Some Aspects of Farm Surgery" (with illustrations).

Drs. G. C. Holm, F. M. Shigley, J. D. Ray, Martin Roepke, E. R. Frank, and T. O. Brandenburg were members of a panel which discussed "Cattle Diseases."

New officers of the Association are Drs. D.

A. Wire, Valley City, president; C. B. Bjornson, Mandan, vice-president; and T. O. Brandenburg, Bismarck, secretary-treasurer.

s/FREDERIK LOW, *Resident Secretary.*

Nova Scotia

Maritime Associations.—The Maritime Veterinary Associations (Prince Edward Island, Nova Scotia, and New Brunswick) held their second annual joint conference at Mount Allison University, Sackville, N.B., on June 27-29, 1950. The meeting was opened by Dr. Chas. A. Mitchell, Dominion animal pathologist, who held the chair for the first session. Chairmen for the other three sessions were Drs. J. E. Hendry, W. M. Mutrie, and O. S. Nordland, presidents of the Nova Scotia, New Brunswick, and Prince Edward Island veterinary associations, respectively. The program follows.

Dr. R. A. McIntosh, head, Department of Medicine, Ontario Veterinary College, Guelph: "The Prevention of Disease in Swine."

Dr. J. R. Cunningham, Summerside, Prince Edward Island: "Medical Laboratory Techniques."

Dr. J. T. Akins, director, Provincial Veterinary Services, Fredericton, N.B.: "The Role of Hormones in Reproduction."

Dr. J. E. Hendry, president, Nova Scotia Veterinary Association, was chairman of a panel discussion on "Cattle Diseases." Other members of the panel were Drs. O. S. Nordland, Charlottetown, P.E.I.; J. H. Scott, Port Williams, N.S.; and S. E. Magwood, Sussex, N.B.

Dr. D. L. T. Smith, Department of Pathology, Ontario Veterinary College, Guelph: "Canine Hepatitis."

Dr. S. W. Stiles, Falmouth Foreside, Maine: "Notes on General Practice."

Dr. P. J. G. Plummer, Animal Diseases Research Institute, Hull, Quebec: "The Laboratory Diagnosis of Distemper with Special Reference to Fox Distemper."

Dr. O. S. Nordland was chairman of a panel on "Small Animal Diseases." Other members of the panel were Drs. L. P. Rutherford, Halifax; J. E. MacLean, Halifax; and D. B. Butterwick, Fredericton.

Dr. Chas. A. Mitchell, Animal Diseases Research Institute: "Skin Lesions, Their Relationship to the Tuberculin Test."

Dr. J. M. Veilleux, director, Health of Animals Service, Provincial Department of Agriculture, Quebec: "Lead and Arsenic Poisonings in Cattle."

Dr. H. W. McKiel, vice-president, Mount Allison University, was guest speaker at the banquet.

s/E. E. I. HANCOCK, *Resident Secretary.*
J. F. FRANK, *Committee on Arrangements.*

Wyoming

State Association.—More than 90 per cent of the members of the Wyoming Veterinary Medical Association were in attendance at a two-day convention in Sheridan on June 18-19, 1950. Sheridan veterinarians L. H. Davidson, Pete Madsen, J. R. Connell, F. L. Auchmuty, Wm. A. Goodfellow, and John Wilson were hosts and arranged a fine meeting. Those appearing on the program were Drs. A. B. Knight, Casper; Carl Norden, Jr., Norden Laboratories, Lincoln, Neb.; H. E. Pinkerton, Fort Dodge Laboratories, Fort Dodge, Iowa; L. H. Davidson, field veterinarian, Wyoming Livestock and Sanitary Board, Sheridan; J. F. Ryff, veterinarian in charge, State Veterinary Laboratory, Laramie; state veterinarians G. H. Good, Wyoming; M. N. Riemenschneider, Colorado; A. P. Schneider, Idaho; and E. H. Anderson, Nebraska.

Dr. V. J. Humphreys, Worland, was elected president; Dr. Robert Pierson, Saratoga, vice-president; and Dr. Jo Browne, Laramie, secretary-treasurer. The following were elected to the Executive Committee: Drs. Weldon Lee, Powell; Hank Stoddard, Laramie; and O. E. Bunnell, Worland.

Several Bureau veterinarians, members of the state veterinary staff, and visitors from other states attended this meeting. On Sunday evening, the veterinarians and their wives were treated to a Dutch lunch at the Sheridan Sportsman Club. Following the lunch, a picture by the Vacation Films on the production of livestock was shown. Dr. W. A. Goodfellow told of his experiences in Old Mexico while working on the foot-and-mouth disease-eradication program, and showed color films taken while he was there.

s/JO BROWNE, *Secretary.*

FOREIGN NEWS

Denmark

National Association Celebrates.—By celebrating its centennial anniversary (Sept. 24-25, 1949), the Danish Veterinary Association again reminded the world's veterinarians that the age of their profession barely tops the longevity of their older set. Their profession was born in the 1840's in France, in Great Britain, in Denmark, and in other countries where veterinary colleges had been established. It thus began to provide a medical service for livestock, the principal product of the land which was being threatened on every side with destructive plagues of such mysterious nature that a veterinary science was conceived to sally forth and unravel the puzzle.

The reported attendance at the centennial was 300. Guests from England, Scotland, Sweden, Norway, Finland, and Iceland participated in the ceremonies. The sessions were held at the Royal Veterinary and Agricultural College in Copenhagen. Although also a regular annual

meeting of the Association, the program was ceremonial rather than scientific. The event was climaxed by a formal banquet of extraordinary magnificence at the internationally famous restaurant, Wivex, in Vesterbrogade.

France

Mobile Diagnostic Laboratory.*—Ramon and Lesbouyries of the veterinary academy and Bressou, speaking for the agricultural academy,

Fig. 1—Rear right facade of the Calvados mobile diagnostic laboratory.

stress the necessity of providing farmers and their veterinarians with a better laboratory diagnostic service than stationary laboratories can furnish. The need is a cavalcade of laboratory-equipped, 3-ton trucks, strategically deployed throughout a country, manned with technicians, and ready to be called to the rescue of infected centers by making correct diagnoses and setting the right treatment in operation with minimum damage.

Jacobét (*Bull. Acad. vét. France,* Feb., 1950) gives the complete specification of such laboratories, with nine graphic illustrations based upon one used by the Laboratorie de Biologie et d'Hygiene of Calvados, France. No equipment for making a quick diagnosis is omitted. Good antishock mechanism prevents breakage of the delicate cargo.

*Mobile laboratories are standard equipment in the Medical Department of the U.S. Army.

Great Britain

Woman Veterinarian Honored.—Miss Joan O. Joshua, of Finchley, England, is the first woman to be awarded the fellowship of the Royal College of Veterinary Surgeons (F.R.C.V.S.). The award was made on April 21, 1950, in recognition of her thesis on "Some Clinical Observations on Leptospirosis in Suburban Dogs."

Miss Joshua obtained her diploma in veterinary medicine (M.R.C.V.S.) in July, 1938, following study at the Royal Veterinary College and Hospital of London. Since then, she has spent most of her time in private practice and has been an active member of the National Veterinary Medical Association of Great Britain and Ireland.

"Since the first woman veterinary surgeon, Miss Aileen Cust, was admitted to the profession as a London graduate in 1922, there has been a steady influx of women members, a number of whom are making their mark in the fields of practice, research, and veterinary public health," says *The Veterinary Record* (April 29, 1950).

VETERINARY MILITARY SERVICE

Reorganization of the Reserve Corps.*—As of April 1, 1950, the organized Reserve Corps is composed of the following subdivisions: Active Reserve, Inactive Reserve, and the Honorary Reserve.

The Active Reserve is composed of all qualified personnel of the ORC who complete and continue to participate satisfactorily in a prescribed minimum of training. The Active Reserve is divided into two parts—those assigned to the Organized Reserve and those assigned to the Volunteer Reserve.

The Organized Reserve consists of those who are assigned to ORC troop program units or have been given mobilization designations; the Volunteer Reserve consists of those who have not been assigned to ORC units and who do not have mobilization designations.

The Inactive Reserve consists of members of the ORC who are (a) physically and professionally qualified but who are (1) unable to participate in required activities of the Active Reserve or request assignment to the Inactive Reserve; (2) transfer from the Active Reserve due to being over-age in grade; (3) transfer from the Active Reserve by administrative action because of unwillingness to participate in required activities or failure to meet minimum training requirements. Temporarily, physically disqualified reservists whose physical defects are deemed remediable within one year, and certain enlisted personnel who have been retired from the regular Army with less than thirty years' service complete the categories included under Inactive Reserve.

The Honorary Reserve consists of members of the ORC (1) whose service has been honorable and who have completed twenty years' service in any component of the Armed Forces, provided they apply for the Honorary Reserve; (2) who have reached the age of 60 and have completed a total of twenty years' service in any component of the Armed Forces; and

*Taken from Army Regulations No. 140-305. Issued 27 January, 1950, effective April 1.

(3) who have become physically disqualified other than through their own misconduct to perform duties incident to the grades held.

Sections of the Active and Inactive Reserve included in the medical department are (a) Army Nurse Corps, (b) Dental Corps, (c) Medical Corps, (d) Medical Service Corps, (e) Veterinary Corps, (f) Women's Medical Specialists Corps.

Active reservists will be organized into units as follows: (1) Organized Reserve will have T/O and E units, (2) T/D units or ORC control groups that have a T/D mobilization designation, and (3) control groups that have T/O and E mobilization designations. The Volunteer Reserve will be divided into three subdivisions: (1) ORC control groups which include Volunteer Reserves, (2) the ORC control groups including Regular Army personnel and, (3) ORC training units.

The organization, assignment of personnel, location, activation, and advancement of these reserve units are under the direction of Army Area commanders.

A new subdivision under the ORC training units is entitled Research and Development Units. In military districts where there is sufficient number of reserve officers in the Voluntary Reserve who can not be members of the Organized Reserve and who are qualified to be engaged in research and development, the chief of a military district will recommend the formation of one or more of these research and development units. This recommendation is submitted through channels to the Adjutant General and, after clearance has been received, the director of the districts shall issue the authority to organize the unit or units and the assignment of such recommended officers. Enlisted personnel also will be assigned and generally will not exceed 10 per cent of the unit.

ORC control groups have the purpose of providing a carrying vehicle for reservists not assigned to T/O and E, T/D, or training units. Again, it is the responsibility of area commanders to organize the type and number of control groups within their command according to specified regulations.

Existing Class C units will be surveyed and inspected by area commanders to determine their status and capability of attaining or maintaining the standards established in the new regulations governing ORC units. Units not within the allocated authorization of the ORC will be redesignated to the required type units or be disbanded or inactivated and, if standards for training units can be met, considered for conversion to a training unit. Units within the allocated authorization of the ORC program which are considered incapable of attaining required standards will be relocated, if possible, or they will be discontinued or a request will be submitted to the Army for their inactivation, with every effort being made to utilize the personnel in other units rather than reassigning personnel to the Volunteer Reserve. Those units within the allocated authorization of the ORC program which are capable of attaining the required standards must reach that status within three months from the date of selection by the area commanders. Failure to attain required status will result in action as indicated for units deemed incapable of attaining required standards. Other units within the allocated authorization which have attained the standards prescribed will be continued in their proper class, and Class C units will be required to progress.

• • •

Refresher Course.—A new, seventeen-week course in advanced veterinary medicine will begin Aug. 28, 1950, under the supervision of Lt. Col. Robert H. Yager, director of the Veterinary Division at the Army Medical Department Research and Graduate School. Purpose of the course is to train selected officers in the accepted methods of preventive veterinary medicine and animal pathology. The class will be composed of eight Army officers and four Air Force officers.

S/MAJOR GENERAL PAUL H. STREIT,
Commanding General.

STATE BOARD EXAMINATIONS

West Virginia—The West Virginia Veterinary Board will convene at the Stonewall Jackson Hotel, Clarksburg, on Monday, Oct. 9, 1950, at 9:00 a.m., for the purpose of giving examinations to those desiring to register to practice veterinary medicine in the State of West Virginia. Applications must be in the hands of the secretary at least ten days before the date for examinations. Applications will be accepted only from graduates of schools of veterinary medicine recognized by the AVMA. For further information write Dr. William E. Trussell, Secretary, West Virginia Veterinary Board, Charles Town, W. Va.

DEATHS

★**Frank E. Barnes** (KCVC '09), 66, Newman, Calif., died April 13, 1950. He had been with the Bureau of Animal Industry for eight years, resigning in 1942. Dr. Barnes was a member of the North San Joaquin Valley and California State veterinary medical associations and of the AVMA.

★**Ward Giltner** (CORN '06), Higgins Lake, Mich., died July 14, 1950, of a heart attack. His obituary appears on page 239 of this JOURNAL.

★**Neal McNeal** (OSU '11), 66, Versailles, Ohio, died May 22, 1950. Dr. McNeal was admitted to the AVMA in 1916.

★Indicates Members of the AVMA.

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An' Related Topics

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Numbers

Quite often contributors to AVMA publications seem puzzled about the rules governing the writing of figures and/or words in enumerating persons, animals, cases, groups, herds, injections, and others. In the absence of a stylebook on AVMA usage, critical authors noting editorial changes in the writing of figures in their manuscripts, aptly inquire for the *raison d' etre*. The American Medical Association Press, explaining its usage in this connection, says (*Medical Writing*, 1938:90-95):

> Numbers appear often in scientific, especially statistical [and research] articles; it is sometimes difficult to determine when they shall be spelled out and when put in figures.

The fact that this popular book of the medical profession then devotes five pages to general and specific rules on the writing of numbers indicates the importance presently attached to rules governing the expression of numbers in figures and words.

Whether numbers shall be written in figures or spelled out in given places applies both to cardinals and ordinals, although personal opinions in regard to the latter differ somewhat. Some publications spell out round number ordinals: twentieth, fiftieth, etc. The AVMA publications spell out ordinals up to and including one hundredth, except in the instance where a series is used in a sentence, thus: The 3rd, 10th, 16th, 75th, 155th, and 187th animals were vaccinated. All ordinals in round numbers are spelled out: two hundredth, seven hundredth, one thousandth, one millionth.

In the generality of writing (newspapers, magazines, books), as observing readers know, the usual style is to spell out numbers from *one* through *ten* and to write them in figures from *11* up. But even in scientific articles, this simple rule is mutable. The rule, for example, has to be ignored for

(Continued on p. 26)

COMING MEETINGS

Notices of Coming Meetings must be received by 8th of month preceding date of issue

Iowa, Nutrition Conference for Veterinarians. Sponsored by the Iowa Veterinary Medical Association, the Iowa Feed Institute, and the Western Grain Feed Association. Iowa State College, Ames, Sept. 7, 1950. C. D. Lee, extension veterinarian.

Tennessee Short Course for Veterinarians. University of Tennessee, Knoxville, Tenn., Sept. 7-8, 1950. Dennis Coughlin, 1713 Yale Ave., Knoxville 16, Tenn., resident secretary.

Canadian Veterinary Medical Association. Annual meeting. Windsor Hotel, Montreal, P.Q., Sept. 7-9, 1950. Orlan Hall, 215 Third Ave., Ottawa, Ont., Secretary.

Mississippi, Northeast Mississippi Veterinary Association Clinic. Dr. W. L. Stroup's Clinic, Corinth, Sept. 12, 1950. L. W. Turner, Louisville, Miss., secretary.

Missouri, Southeast Veterinary Medical Association. Fall meeting. Dr. J. V. Moore's Hospital, Hayti, Mo., Sept. 20, 1950. F. A. Stepp, 405 West North St., Sikeston, Mo., secretary.

Colorado Veterinary Medical Association. Fall meeting. Denver, Colo., Sept. 28-29, 1950. John W. Harrison, 420 Sunset Dr., Longmont, Colo., secretary.

New Mexico Veterinary Medical Association. Annual meeting. Hilton Hotel, Albuquerque, N. Mex., Oct. 2-3, 1950. O. J. Rollag, 1825 Campus Boulevard, Albuquerque, N. Mex.

Pennsylvania State Veterinary Medical Association. Annual meeting. Galen Hall, Wernersville, Pa., Oct. 4-6, 1950. Raymond C. Snyder, N.W. Corner Walnut St. and Copley Rd., Upper Darby, Pa., secretary.

Purdue University, thirty-eighth annual short course for veterinarians, Oct. 4-6, 1950. L. M. Hutchings, Purdue University School of Agriculture, Lafayette, Ind., chairman.

New England Veterinary Medical Association. Annual meeting. Mohican Hotel, New London, Conn., Oct. 10-11, 1950. C. Lawrence Blakely, 180 Longwood Ave., Boston, Mass., secretary.

International Association of Milk and Food Sanitarians. Annual convention. Dennis Hotel, Atlantic City, N. J., Oct. 13-16, 1950. K. G. Weckel, University of Wisconsin, Madison, Wis., president-elect.

(Continued on p. 28)

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a paragraph in which a series is used two or more times: 3, 5, 9, 16, 28, 62 injections instead of three, five, nine, 16, 28, 62. Moreover, it is good usage to write "a hundred men," "two thousand cows," "10 million soldiers," "$3 billion," and so forth, all of which, however, violate the *one* through *ten* rule aforementioned.

However, to repeat, in scientific material, numbers are so numerous and appear in such varied juxtaposition that editors have to frame general and special rules to present a respectable literary front to the reading public.

In short, no single rule on numbers is competent for veterinary medicine. There are many things to number in writing on animal production and health and the numbers fall into categories that can be classified, namely:

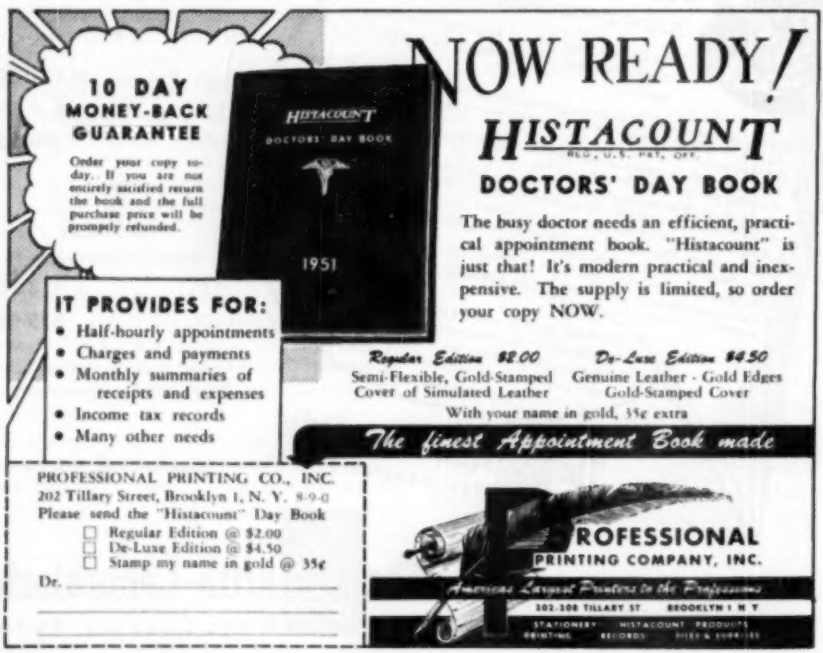
1) In AVMA publications regardless of how many or how much, the following groups are numbered with figures: animals, patients, cases, persons, weights, measures, percentages, temperatures, clock hours, folios, decimal fractions, and the age of living things (animals, persons, embryos, parasites). One writes:

2 cows	28 cows
3 sheep	75 rams
2 cases	32 cases
8 attendants	16 herdsmen
3-year-old cow	18-year-old horse
3-month embryo	13-week-old chicken
4 tons	25 lb.
6 Gm.	200 cc.
5 C.	98.6 F.
4:30 p.m.	11 a.m.
6 per cent	55 per cent
page 2	page 102

The only exception to this rule is numbers at the beginning of sentences. Such numbers should be spelled out or change the construction of the sentence.

(*To be continued*)

English has become the most widely used language for scientific literature, replacing German and French, Prof. Fletcher S. Boig of Northwestern University told a Boston audience. A survey has shown that 57 per cent of all the scientific articles are now published in English.—*From Science News Letter.*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(COMING MEETINGS — *continued from p. 24*)

Missouri, University of. Annual short course. School of Veterinary Medicine, University of Missouri, Columbia, Mo., Oct. 16-17, 1950. Cecil Elder, chairman.

Iowa, Eastern Veterinary Medical Association. Annual meeting. Hotel Montrose, Cedar Rapids, Iowa, Oct. 19-20, 1950. N. R. Waggoner, Olin, Iowa, secretary.

Minnesota, Conference for Veterinarians. Annual conference. University of Minnesota, School of Veterinary Medicine, St. Paul 1, Minn., Oct. 25-26, 1950. W. L. Boyd, 2227 Hillside Ave., St. Paul 8, Minn., chairman.

Mississippi Valley Veterinary Medical Association. Fall meeting. Pere Marquette Hotel, Peoria, Ill., Nov. 1-2, 1950. R. J. Kirkpatrick, 1235 N. Henderson St., Galesburg, Ill., secretary.

United States Livestock Sanitary Association. Annual meeting. Westward-Ho Hotel, Phoenix, Ariz., Nov. 1-3, 1950. Dr. R. A. Hendershott, 1 West State St., Trenton, N.J., secretary.

Cornell Nutrition Conference for Feed Manufacturers. Statler Hotel, Buffalo, N. Y., Nov. 2-3, 1950. F. W. Hill, Poultry Department, Cornell University, Ithaca, N. Y., chairman.

Southern Veterinary Medical Association. Annual meeting. Baker Hotel, Dallas, Texas, Nov. 6-8, 1950. A. A. Husman, 320 Agricultural Bldg., Raleigh, N. Car., secretary.

Texas, State Veterinary Medical Association of. Annual winter meeting will be held in conjunction with the Southern Veterinary Medical Association. Baker Hotel, Dallas, Texas, Nov. 6-8, 1950. Leon G. Cloud, 2833 W. Seventh St., Fort Worth 7, Texas, resident secretary.

Third Inter-American Congress on Brucellosis, The. Washington, D.C., Nov. 6-10, 1950. Wesley W. Spink, University of Minnesota Medical School, chairman.

New York State Veterinary College. Annual conference for veterinarians. Cornell University, Ithaca, N. Y., Jan. 3-5, 1951. W. A. Hagan, dean.

Oklahoma Veterinary Medical Association. Annual meeting. Skirvin Hotel, Oklahoma City, Okla., Jan. 8-9, 1951. Lewis H. Moe, 1736 W. 3rd Ave., Stillwater, Okla., secretary.

Indiana Veterinary Medical Association. Annual meeting. Hotel Severin, Indianapolis, Ind., Jan. 10-12, 1951. W. W. Garverick, Zionsville, Ind., secretary.

Iowa Veterinary Medical Association. Annual meeting. Hotel Fort Des Moines, Des Moines, Iowa, Jan. 17-19, 1951. F. B. Young, P.O. Box 6, Waukee, Iowa, secretary.

Michigan State College. Annual postgraduate conference for veterinarians. School of Veterinary

(*Continued on p. 30*)

GEXANE...

One APPLICATION DESTROYS MANGE MITES!

GEXANE . . . a 1% concentration of the Gamma Isomer of Hexachlorocyclohexane . . . is the newest, fastest and most powerful insecticide yet developed for the treatment of parasitic infestation. One application kills ticks . . . destroys mites, including Sarcoptes scabiei and Demodex canis . . . kills flies, fleas and lice.

Important, also, to both doctor and owner is the fact that GEXANE has no disagreeable odor, and when used as directed is non-toxic to all species of vertebrate animals, including man.

GEXANE is supplied both as a liquid in 4 oz. bottles, pints and gallons . . . and as an ointment in ¾ oz. tubes and pound jars.

Write for literature. Directions for use included with shipment.

STRASENBURGH Co.

Pioneering in Veterinary Pharmaceuticals Since 1886

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QUICKER RESULTS WITH

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Accepted and used by the profession since 1900

in the treatment of Splints, Spavins, Curbs, Side Bones, Inflamed Tendons, Bursal Lameness, Etc.

Single Bottle.....	**$ 2.00**
¼ Dozen and One FREE....	**5.00**
½ Dozen and Two FREE....	**9.00**
1 Dozen and Four FREE....	**17.00**
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Packaged Medicines for Veterinarians

Back in 1896 we began our unique service of supplying the Veterinarian with a line of effective Pharmaceutical Products labeled with his name and address, ready to be dispensed at his office or carried on professional calls. This valuable Carter-Luff service provides the busy practitioner with additional income yet, at the same time, provides many hours of needed relaxation during his weekly routine.

Write for Descriptive Price Sheet of a Hundred Dispensing Products

CARTER-LUFF CHEMICAL CO.
Hudson, N. Y.

(COMING MEETINGS — *continued from p. 28*)

Medicine, Michigan State College, East Lansing, Mich., Jan. 24-25, 1951. C. S. Bryan, dean.

Illinois State Veterinary Medical Association. Annual meeting. Hotel Sherman, Chicago, Ill., Jan. 25-27, 1951. A. G. Misener, 6448 North Clark St., Chicago 26, Ill., secretary.

Minnesota State Veterinary Medical Society. Annual meeting. Hotel Nicollet, Minneapolis, Minn., Jan. 31-Feb. 2, 1951. B. S. Pomeroy, School of Veterinary Medicine, University of Minnesota, St. Paul 1, Minn., secretary.

Regularly Scheduled Meetings

Bay Counties Veterinary Medical Association, the second Tuesday of each month. Russell P. Cope, 1205 San Pablo Ave., Berkeley 6, Calif., secretary.

Central California Veterinary Medical Association, the fourth Tuesday of each month. Thomas Eville, Route 1, Box 136H, Fresno, Calif., secretary.

Chicago Veterinary Medical Association, the second Tuesday of each month. Robert C. Glover, 1021 Davis St., Evanston, Ill., secretary.

East Bay Veterinary Medical Association, bimonthly, the fourth Wednesday. O. A. Soave, 5666 Telegraph, Oakland, Calif., secretary.

Fayette County Veterinary Association, Iowa, the third Tuesday of each month, except in July and August, at Pa and Ma's Restaurant, West Union, Iowa. Donald E. Moore, Box 178, Decorah, Iowa, secretary.

Greater St. Louis Veterinary Medical Association. Ralston-Purina Research Building, St. Louis, Mo., the first Friday in February, April, June, and November. W. C. Schofield, Dept. of Animal Pathology, Ralston-Purina Co., St. Louis 2, Mo., secretary.

Houston Veterinary Medical Association, Houston, Texas, the first Thursday of each month. Edward Lepon, Houston, Texas, secretary-treasurer.

Illinois Valley Veterinary Medical Association, the second Wednesday of even-numbered months. R. A. Case, 400 S. Garden St., Peoria, Ill., secretary.

Indiana Tenth District Veterinary Medical Association, third Thursday of each month. L. A. Snider, New Palestine, Ind, secretary.

Jefferson County Veterinary Society of Kentucky, Inc., the first Wednesday evening of each month, in Louisville or within a radius of 50 miles. F. M. Kearns, 3622 Frankfort Ave., Louisville 7, Ky., secretary.

Kansas City Veterinary Medical Association, the third Tuesday of each month, in the Hotel Continental, 11th and Baltimore, Kansas City, Mo. K. M. Curts, 70 Central Ave., Kansas City 18, Kan., secretary.

Keystone Veterinary Medical Association, School of Veterinary Medicine, University of Pennsyl-

(*Continued on p. 32*)

You can recommend PARD in exactly these words! It's a statement of *fact*...

"When you feed Pard—you

FEED YOUR DOG AS WELL AS YOU FEED YOURSELF!"

It's true, and the table below proves it. Every can of PARD gives a dog as much nourishment as you get in this hearty, nutritious lamb chop dinner!

Look how these dinners compare!

		LAMB CHOP DINNER	PARD (1 CAN)
Protein	(gms.)	26.4	52.8
Carbohydrate	(gms.)	42.5	45.7
Fat	(gms.)	54.2	14.7
Iron	(mgs.)	5.2	22.7
Calcium	(gms.)	0.05	2.0
Phosphorus	(gms.)	0.38	1.59
Vitamin A	(units)	499.0	550.0
Thiamine	(mgs.)	0.58	1.41
Riboflavin	(mgs.)	0.43	1.86
Niacin	(mgs.)	8.71	18.2

Energy: Lamb chop dinner: 25.4% of daily caloric needs for average man
Pard (1 can): 100% of daily caloric needs for 20-lb. dog

And only Pard can give you this *added* assurance: for 15 years in Swift's own research kennels, *eleven* consecutive generations of dogs (over 1500 dogs, over 250 litters!) have been raised on an exclusive diet of Pard. And they have thrived, full of health, life and vigor, on this single, *complete* food . . . with normal reproduction.

Here's proof . . . GENERATIONS of it . . . that when a dog is fed Pard he needs nothing more. And he can get nothing better!

NATIONAL DOG WEEK, SEPT. 24-30

FROM THE RESEARCH LABORATORIES OF SWIFT & COMPANY

PYRIBENZAMINE® an effective antihistaminic
Veterinarians are learning how effective Pyribenzamine is in controlling histamine induced reactions such as allergic dermatitis, pruritis, urticaria, bronchial asthma and associated coughing symptoms. It has been found effective in preventing or alleviating anaphylactic shock, induced through the use of protein antisera, bacterial antigens, and other reaction inducing materia.
Among other symptoms controlled or helped by Pyribenzamine are Laminitis • Azoturia • Certain Food Poisonings.
Reprint on the use of Pyribenzamine, by J. D. Sweet, D. V. M., et al., (October 1949 CORNELL VETERINARIAN), available on request.
PYRIBENZAMINE® (brand of tripelennamine)
Tablets, 50 mg., 100 $2.00
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Rubber-stoppered vials, 2% solution,
30 cc. $1.25
125 cc. $3.00
500 cc. $7.50
Cream, 1 oz. tube $ .50
1 lb. jar $4.80
Pyribenzamine, a product of Ciba Pharmaceutical Products, Inc., is distributed to the Veterinary Profession through:
GOSHEN LABORATORIES, INC., GOSHEN, NEW YORK
GOSHEN Leads...

(COMING MEETINGS — *continued from p. 30*)

vania, Philadelphia, Pa., the fourth Wednesday of each month, October through May. Leonard Krawitz, 5300 Lancaster Ave., Philadelphia 31, Pa., secretary.

Maricopa County Veterinary Association, the second Tuesday of each month. Charles J. Prchal, 1722 East Almeria Road, Phoenix, Ariz., secretary.

Massachusetts Veterinary Association. Hotel Statler, Boston, Mass., the fourth Wednesday of each month. C. L. Blakely, Angell Memorial Animal Hospital, 180 Longwood Ave., Boston, Mass., secretary-treasurer.

Michiana Veterinary Medical Association, the second Thursday of each month. Write R. W. Worley, secretary, 3224 L.W.W., South Bend, Ind., for location.

Michigan, Southeastern Veterinary Medical Society. Herman Kiefer Hospital, Detroit, Mich., the second Wednesday of each month from October through May.

Milwaukee Veterinary Medical Association. Wisconsin Humane Society, 4150 N. Humbolt Ave., Milwaukee, Wis., the third Tuesday of each month. Kenneth G. Nicholson, 2161 N. Farwell Ave., Milwaukee, Wis., secretary.

Monterey Bay Area Veterinary Medical Association, the third Wednesday of each month. C. Edward Taylor, 2146 South Broad St., San Luis Obispo, Calif., secretary.

New York City Veterinary Medical Association. Hotel Statler, New York, N. Y., the first Wednesday of each month. C. R. Schroeder, Lederle Laboratories, Inc., Pearl River, N. Y., secretary.

North San Joaquin Valley Veterinary Medical Association, the fourth Wednesday of each month. V. E. Graff, Oakdale, Calif., secretary.

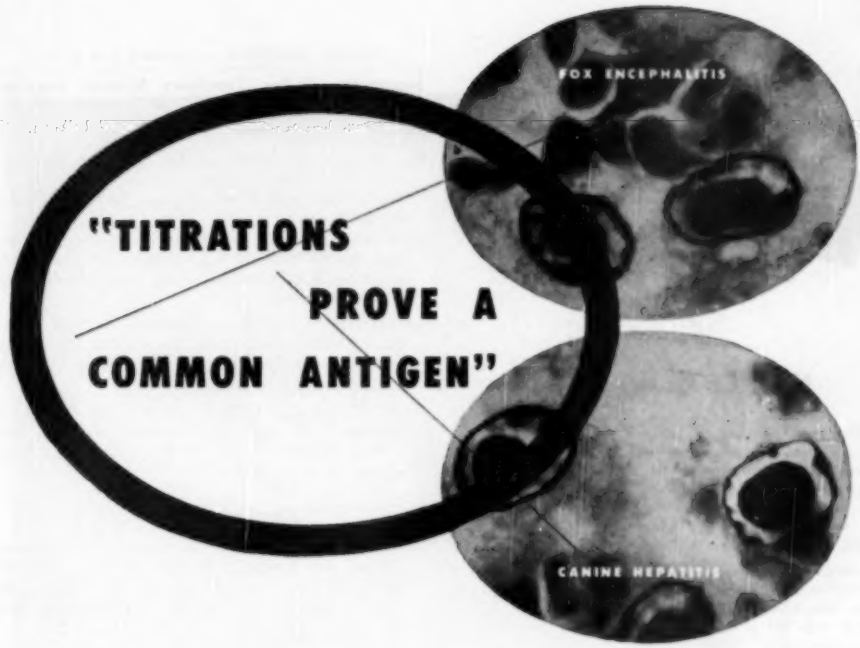
Orange Belt Veterinary Medical Association, the second Monday of each month. James R. Ketchersid, 666 East Highland Avenue, San Bernardino, Calif., secretary.

Orange County Veterinary Medical Association, bimonthly, the second Tuesday of each month. J. H. Bower, P. O. Box 355, Santa Ana, Calif., secretary.

Peninsula Veterinary Medical Association, the third Monday of each month. E. W. Paul, Box 866, Redwood City, Calif., secretary.

Redwood Empire Veterinary Medical Association, the third Thursday of each month. John E. Wion, 3164 Redwood Highway South, Santa Rosa, Calif.

(*Continued on p. 34*)



Results of recently conducted virus titrations* have corroborated the observations of Ruborth; i.e., fox encephalitis and canine hepatitis have common antigenic properties. They are identical morphologically, in staining characteristics and cannot be differentiated microscopically.

With a growing incidence of hepatitis in dogs, Anti-Fox Encephalitis Serum now assumes greater significance to the veterinarian in providing him with both treatment and effective protection against this contagious and highly fatal disease for his canine patients. Used therapeutically, a marked improvement promptly follows the FIRST injection.

This prompt action of Anti-Fox Encephalitis Serum also serves as a valuable diagnostic aid. Since the observable early symptoms of canine hepatitis are almost identical with those of canine distemper, differentiation between these two diseases is necessary. Thus... CLINICAL DIAGNOSIS BETWEEN CANINE DISTEMPER AND FOX ENCEPHALITIS IN DOGS (Canine Hepatitis) IS NOW POSSIBLE.

* Accepted for publication by the Journal of A. V. M. A.

FROMM ANTI-FOX ENCEPHALITIS SERUM

SOLD ONLY TO QUALIFIED GRADUATE VETERINARIANS • SUPPLIED IN 50 CC. AND 100 CC. VIALS

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The MacAllan Ear Cropping Form, affixed to the ear, provides an accurate pattern against which to cut with knife or razor blade. Form fits firmly, cannot move or slip when clamped into proper position.

Made of non-rusting, light, cast aluminum, highly polished, the MacAllan Ear Cropping Form will last a lifetime with minimum care. Simplicity of design and construction reduces possibility of breakage or mechanical failure.

Forms immediately available to provide distinctive markings of these breeds:

Boxer
Price, postpaid $15.00

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Great Dane
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Doberman
Price, postpaid $15.00

Set of above four
Price, postpaid $50.00

Forms for other breeds made on special order.

These are all truly "championship" forms. They have been patterned after the earmarkings of dogs who have won top honors in show competition. Patents pending.

STEP 1

STEP 2

STEP 3

Sold to Veterinarians Only

Send Check or Money Order

MacALLAN LABORATORIES
Route No. 2, Box 420, Lansing, Michigan

(COMING MEETINGS — *continued from p. 32*)

Sacramento Valley Veterinary Medical Association, the fourth Friday of each month. R. C. Goulding, 11511 Capitol Avenue, Sacramento, Calif., secretary.

San Diego County Veterinary Medical Association, the fourth Tuesday of each month. R. J. McFarland, 3621 Jewell St., San Diego 9, Calif., secretary.

Southern California Veterinary Medical Association, the third Wednesday of each month. D. H. McDole, 8674 Melrose Ave., Los Angeles 46, secretary.

South Florida Veterinary Society, the third Tuesday of each month, 8:00 p.m., at the Peckway Skeet Club, Robert P. Knowles, 2936 N.W. 17th Ave., Miami, Fla., secretary.

Tulsa Veterinary Medical Association, the third Thursday of each month, 8:00 p.m., at the Tulsa Hotel. R. S. Todd, 1222 S. Lewis, Tulsa, Okla., secretary.

Foreign Meetings

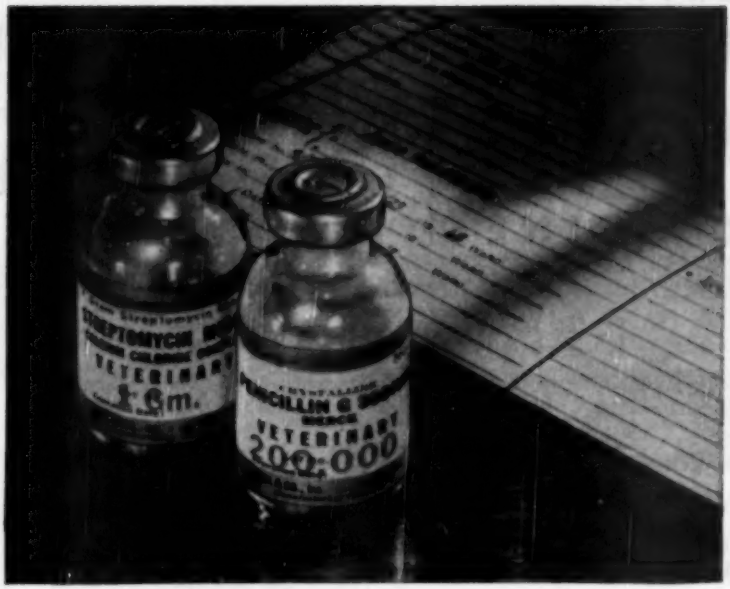
National Veterinary Medical Association of Great Britain and Ireland. Annual meeting. Cardiff, South Wales, Sept. 3-8, 1950. F. Knight, 36 Gordon Square, London, WC. 1, England, general secretary.

First Pan-American Veterinary Conference. Lima, Peru, May 20-26 (tentative), 1951. José Santivañez, dean, Veterinary College, San Marcos University, Lima, Peru.

Appointments to Purina Research Staff

The following were appointed to the Purina research staff effective July 1, 1950: Dr. Robert L. Kilgore (TEX '50), research assistant in the Animal Pathology and Disease Control Laboratories; Dr. Roland W. Winterfield (ISC '50), assistant animal pathologist in the Disease Control Laboratory; Dr. Charles W. Darby (MSC '40) joined the Sanitation-Farm Supply Department as manager of disease prevention products.

Massacro di Indiani.—While we are taking the socio-political inventory of other nations, they too are making an inventory of ours. *Rivista Dell'Instituto Sieroterapico, Italiano,* quoting from an article in the *American Journal of Public Health,* points to the high infant and adult mortality among the American Indians in their "concentration camps" as a "massacre of the Indians."



STREPTOMYCIN CALCIUM CHLORIDE COMPLEX *and* CRYSTALLINE PENICILLIN G SODIUM

Both of these important products are available to members of the veterinary profession from their usual source of supply, under a veterinary label, as illustrated.

The high degree of purity of both Streptomycin Merck (Calcium Chloride Complex) Veterinary and of Crystalline Penicillin G Sodium Merck Veterinary ensures full therapeutic potency with a minimum of toxicity.

A package insert giving the indications, dosage, precautions, and methods of administration accompanies each vial.

WHEN YOU ORDER YOUR REQUIREMENTS — *SPECIFY* MERCK

MERCK & CO., Inc., RAHWAY, N. J.

Manufacturing Chemists

Relieves Pain . . .

Reduces Congestion

— in sprains, muscle and tendon injuries, joint involvements.

NUMOTIZINE®

Medicated Emplastrum

Exceptionally convenient — Numotizine is easily applied; one application lasts 8 hours or more.

Supplied in 30 ounce and 3½ lb. resealable glass jars.

NUMOTIZINE, INC.,

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ARMY OFFICERS'

PINK TROUSERS

100% ALL WOOL

WERE $24.50

Our Price $12.50

Never before have these tailored Army Officers' All-Wool Pink Trousers been offered at so low a price. This is not surplus, but tailored, finished with flaps, tunnel loops and Zipper, and it has our full guarantee that you must be satisfied or your money refunded. This ad will appear only once, as our stock is limited.

These pinks originally sold as high as $24.50. Our special price to you, $12.50 per pair. Sizes 30 to 42. Can also be had in O. D. Green Elastique.

Pink Gabardine Officers' Shirts $5.75

O. D. Green Gabardine Shirts $5.75

Please state correct waist size for trousers; neck and sleeve sizes for shirts.

No orders from dealers, no C.O.D.'s. This is a factory and delivery order.

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Twenty-five words or less, $2.50; 8 cents for each additional word. Replies sent in care of the Journal, 25 cents extra.
Remittance must accompany order.

Deadline for want ads 12th of month preceding date of issue.

Names of classified advertisers using key letters cannot be supplied. Address your reply to the key letters, c/o JOURNAL of the AVMA, 600 So. Michigan Ave., Chicago 5, Ill., and it will be transmitted to the advertiser.

Wanted—Veterinarians

WANTED—Florida-licensed veterinarian to lease small animal clinic in Coral Gables, Miami, Florida. Address Mrs. Marie Brown, 4573 Ponce de Leon, Coral Gables, Fla.

Good future in biologic production and research with a leading, ethical veterinary supply company. Young graduate veterinarian with potential executive ability who is sincerely interested in contributing to the advancement of veterinary science. Write, giving age, qualifications, and salary expected. Enclose photograph. Address "Box Y 10," c/o Journal of the AVMA.

VETERINARIAN WANTED—graduate of AVMA-approved school, preferably single, as an assistant in small animal hospital in New Jersey. Please give experience, college, age, religion, salary expected, and submit photo. Address "Box Y 14," c/o Journal of the AVMA.

WANTED VETERINARIAN—assistant in general practice, Maryland. Partnership later for right man. State qualifications, references, nationality, age, and salary expected in first inquiry. 90 per cent large animal. Address "Box Y 12," c/o Journal of the AVMA.

POULTRY SPECIALIST WANTED—Research and field work. Good opportunity for veterinarian. Address Wallace Hy-Cross Hatcheries, Doylestown, Pa.

Wanted—Practices

WANTED PRACTICE—Veterinarian desires to purchase established small animal practice in New York, New Jersey, or Pennsylvania. $15,000 offered as down payment. Give details. Address "Box Y 6," c/o Journal of the AVMA.

WANTED PRACTICE—Experienced veterinarian, young, ambitious, Christian, and married, desires to buy or lease a good practice (mostly small animal, if possible) in the western or southwestern part of the United States. Must be thriving practice. Address "Box Y 5," c/o Journal of the AVMA.

WANTED—good practice, or assistantship leading to purchase, preferably in the New England states or California. Small animal or mixed practice. Address "Box Y 2," c/o Journal of the AVMA.

Wanted—Positions

POSITION WANTED—Graduate veterinarian,

(Continued on p. 58)

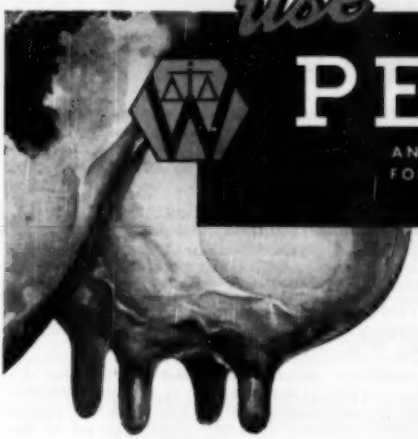
to avoid disappointment in

TREATING MASTITIS

use

PENICLE

ANTIBIOTIC VEHICLE OF CHOICE
FOR INTRAMAMMARY INFUSIONS



Successful penicillin therapy of bovine mastitis is often hampered by failure to provide *therapeutic* concentrations of the antibiotic in the infected quarter for *long enough* periods.

Leading veterinarians have met this problem by selecting **PENICLE** as a vehicle for administering antibiotics in thousands of cases because:

❶ The physicochemical properties of **PENICLE** facilitate permeation of the milk-duct system . . . and help to achieve sustained contact of the antibiotic with the offending organisms.

❷ A single injection of 100,000 units of penicillin in 20 cc. of **PENICLE** ensures the establishment of therapeutic levels which persist for at least *three days,* or six milkings, while the cow remains on a twelve-hour milking schedule. This therapy is particularly effective in bovine mastitis due to *S. agalactiae,* the most common causative factor.

❸ *Each batch of* **PENICLE** *has been biologically tested for its power to maintain a therapeutic concentration of penicillin for seventy-two hours.*

❹ **PENICLE** has received the benefit of thorough experimental and clinical study.

PENICLE is available to graduate veterinarians only. Complete literature on request.

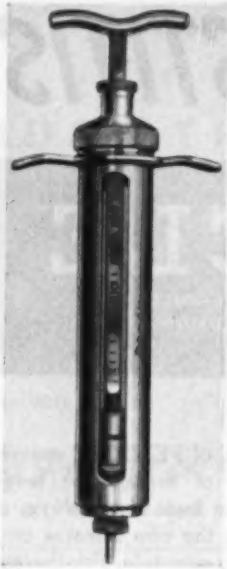
SUPPLIED: Bottles containing 100 cc., cartons of 12 bottles. *Special prices on half-gross and gross quantities.*

PENICLE was developed after years of research. *Accept no substitutes!*

Veterinary Division

WALLACE LABORATORIES, INC. *53 PARK PLACE, NEW YORK 8, N. Y.*

Ranch Record Veterinary Syringe



Superior quality veterinary syringes—Choice of ground glass barrel with metal plunger or rubber packing—Accurate dosage and smooth operation always assured.

Inexpensive replacement parts available.

Inquire at your nearest veterinary dealer or wholesaler concerning this outstanding product.

Sizes 2 cc. to 40 cc.

Boston Record Syringes

High quality syringe consisting of graduated, ground, resistance glass barrel with nickel silver plunger and strongly constructed metal parts. No Washers—No Binding Rubber Packings to interfere with smooth operation. Easily disassembled for sterilization.

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Repair exchanges available.
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Literature Upon Request

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(CLASSIFIED ADS — *continued from p. 36*)

31, not married. Two years' experience in large animal work in Germany, and two years in small animal work in U.S.A. Wishes to work as assistant. Prefers small animal practice. Available middle September. Address "Box Y 3," c/o Journal of the AVMA.

POSITION WANTED—Graduate veterinarian, three years' experience, desires position as assistant in mixed or small animal practice. Single, 29 years old, capable. Address "Box Y 7," c/o Journal of the AVMA.

POSITION WANTED—Experienced small animal veterinarian desires position as assistant, with eventual partnership or ownership, with thriving hospital somewhere in the South, Florida preferred. Address "Box Y 4," c/o Journal of the AVMA.

Lithuanian veterinary surgeon, who has practiced in field more than fourteen years, desires position as assistant veterinary surgeon or in animal hospital. Speaks, reads, and writes English. Address Dr. Steponas Stirbys, 4832 Homerlee Ave., East Chicago, Ind.

Graduate of AVMA-approved school, woman, small animal experience, desires position within 50-mile radius of New York City. New York license. Address "Box X 2," c/o Journal of the AVMA.

1949 graduate of AVMA-approved school desires laboratory or research work. No teaching. Address "Box Y 13," c/o Journal of the AVMA.

Ambitious, experienced, married veterinarian desires position as assistant leading to future partnership or ownership of small, large, or mixed animal practice. Address "Box Y 9," c/o Journal of the AVMA.

English graduate veterinarian, single, age 27, five years' experience general practice, small and large animals, desires position with practicing veterinarian, or with commercial firm or hospital. Address "Box Y 11," c/o Journal of the AVMA.

For Sale or Lease—Practices

FOR SALE—*finest location in California* for veterinarian, next door to *new*, $100,000 city animal shelter in heart of North Hollywood on main boulevard. Modern, 6-room home with 2-room guest house attached, to be converted into small animal hospital. Beautiful landscaped, shaded grounds, 115 ft. wide, 205 ft. deep. Right zoning. Chance of a lifetime for veterinarian. $22,500. Address San-Val Kennels, 13145 Sherman Way, North Hollywood, Calif.

PRESENT OWNER RESERVE OFFICER EMBARKING ON GOVERNMENT MISSION IN NEAR FUTURE—offering entire establishment (large, modern hospital and kennels fully equipped, ample living quarters for doctor's family in the building), attendants may stay on if desired, but doctor must leave. Hospitalized cases averaged 40 daily this month. On main highway suburban Philadelphia. Don't waste time, this won't last long. Priced at cost of property and equipment only, nothing added for practice or good will. Terms: $10,000 mortgage fifteen years, and $16,000 cash (or similar financing). Don't attempt to bargain; don't apply unless ready to take over. Address "Box Y 1," c/o Journal of the AVMA.

(*Continued on p. 40*)

Friskies

Authoritative information on the scientific care and feeding of dogs. Published by Albers Milling Company (a division of Carnation Company) under the supervision of Dr. E. M. Gildow, B.S., M.S., D.V.M., Director of Research.

No. 3

DOG RESEARCH NEWS

How Long Should a Dog Live?

The average monkey lives to be 25 years of age or more. Why should the average dog live to be only 10 or 12?

Actually there are five important controllable factors in extending the span of a dog's life: (1) Careful Selective Breeding, (2) Scientific Feeding, (3) Sanitation and Disease Control, (4) Proper Equipment, and (5) Good Training.

One of the most important (and most easily controlled) factors is Scientific Feeding.

But sentimental owners, unfortunately, still feed their dogs by opinion rather than by scientific standards. Professional dog men know, of course, that you can't omit essentials from a bitch's diet without affecting her ability to breed, to whelp, and to nurse her young. It is also established that the absence of nutritional essentials will affect the length of life of *all* dogs of *both* sexes. That's why dog men have learned to depend on Friskies – a *scientifically* balanced, complete food which contains every known essential for *complete* nourishment.

How Much Fat in a Ration?

Good judgment should be used in the amount of fat that is added to a diet since (1) its high caloric value may reduce total consumption and thus upset the balance of essential nutriments, or (2) it may be responsible for the development of an overfat condition of the dogs to which it is fed. And over-fatness reduces the life span of a dog. The amount of fat in Friskies is carefully controlled according to extensive tests made with dogs of many breeds.

The Value of the Veterinarian

Dog owners should not attempt to "doctor" their own dogs. There is always the danger of overlooking a basic fault or trouble which should be corrected. For example, if a dog does not thrive on Friskies, chances are there is something fundamentally wrong—something which calls for the specialized knowledge of the veterinarian. For Friskies has been scientifically developed to provide every known essential for *complete* nourishment for any normal dog.

Friskies Question Box

Question: What is the most effective method of ridding a dog of fleas?

Answer: D.D.T. powder or dip.

Send your questions about dog breeding, feeding and care to: Friskies, Dept. Y, Los Angeles 36, Calif. The knowledge gained during 50 years of animal experience and research is yours for the asking.

NO SUPPLEMENTS NEEDED WHEN YOU FEED

Friskies

• A COMPLETE DOG FOOD •

3 Sizes: 50, 25, 10, 5, 2 lbs.

A FRISKY DOG IS A HEALTHY DOG

SYMBOL OF QUALITY

PHENOTHIAZINE

REGULAR N. F. or DRENCH TYPE

1 lb. can (12 to case)	74c per lb.
5 lb. can (5 to case)	71c per lb.
10 lb. drum	70c per lb.
25 lb. drum	68c per lb.
150 lb. drum	62c per lb.

PEST CONTROL

BENZENE HEXACHLORIDE
10% gamma isomer wettable

6 lb. bag	45c per lb.
8-6 lb. bags	37c per lb.
100 lb. drum	36c per lb.

CHLORDANE 40% WETTABLE

4 lb. bag	70c per lb.
12-4 lb. bags	62c per lb.
100 lb. drum	57c per lb.

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99% gamma isomer BHC

1 lb. can (12 per case)	$3.60 per lb.
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(CLASSIFIED ADS — *continued from p. 38*)

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Miscellaneous

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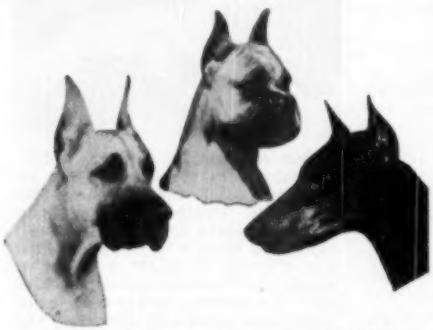
(*Continued on p. 42*)



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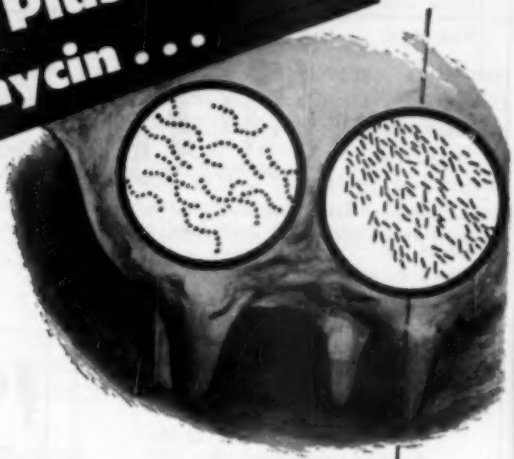

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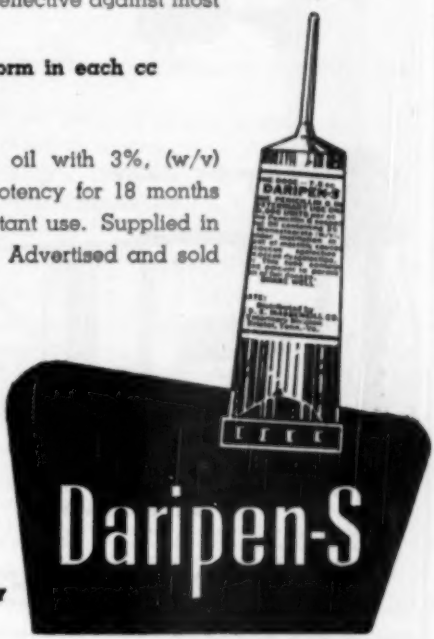

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5 lbs	2.00	25 lb. drum	7.50

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(CLASSIFIED ADS — *continued from p. 40*)

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(*Continued on p. 44*)

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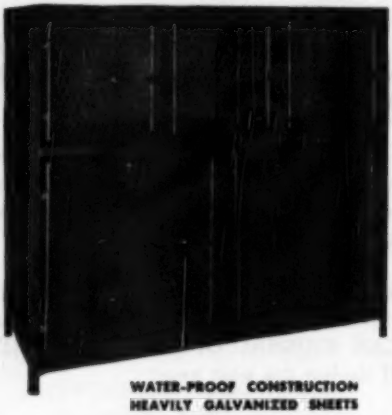

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(CLASSIFIED ADS — *continued from p. 42*)

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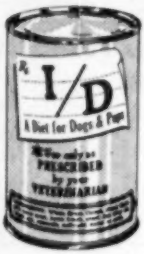

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Illustrations.—Photographs should be furnished in glossy prints, and of a size that will fit into the Journals with a minimum of reduction. Photomicrographs which cannot be reduced should be marked for cropping to 1-column or 2-column width. Drawings should be made clearly and accurately in India ink on white paper. Figures appearing on graphs or charts should be large enough to allow for reduction necessary for the chart or graph to fit on Journal pages. All illustrations should bear the name of the author on the back.

Tables.—Tables should be simple. Complex tables are not conducive to perusal. It is wiser to summarize complex material rather than to attempt to tabulate it.

News.—Secretaries of associations and readers are requested to send us announcements of meetings and news items.

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Does Your Office Girl Practice [Veterinary] Medicine?

The following quotation from *Current Medical Digest* (Aug., 1949) would seem to apply to veterinary medicine as well as human medicine. Although, in the case of veterinarians, it may be the kennel man, or wife, rather than the office girl.

In the last few years, the practice has grown up of office girls practicing medicine. While the doctor is on vacation, his patients frequently call the office girl or nurse and ask questions, and the answers involve the practice of medicine. Technically, these questions should not be answered but should be referred to some responsible person selected by the doctor. We know that the office staff is pretty well acquainted with what the doctor is doing for that particular patient and can, undoubtedly, carry out his ideas during his temporary absence. In cases of emergency, that is the best that can be done, unless another doctor is available to supply the answers. When this type of office prescribing is done, records should be kept and referred to the doctor immediately upon his return. Whenever possible and wherever the question is of any real medical significance, great care should be taken to secure the proper reply, and from authoritative sources. This may mean calling another doctor and asking him the question. Physicians [and veterinarians] should remember that they are responsible for their agent's action. Don't chance a malpractice suit.

The income from poultry exceeds the income from any other livestock species in many of our states.—*G. J. Cottier, D.V.M., Alabama.*

In chilling milk to the temperature usually required by law, the volumetric loss is about 3 1/3 cc. per quart, a Borden speaker told a milk industry convention. The shrinkage, trivial as it seems, runs into sizable figures for the bottler of 100,000 qt. a day.

Putrefaction in Frozen Fish.—The rate of putrefaction and autolysis of air-frozen fish is much more rapid than the rate of fish which have been quickly frozen, provided both are thawed at high temperatures. The reason is not fully understood, but possibly the size of the ice crystal within the cell may determine continuity of the cell wall, the larger crystals breaking the cell membrane and permitting entrance of putrefactive bacteria, according to T. Kawabata. —*The Japanese M.J., 1, April, 1948.*

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